

December 1996

# Mobile Radio Technology<sup>®</sup>

Technical information for paging, SMR and private wireless networks

## *Includes* Buyers' 1997 Guide

- Product Directory
- Services Directory
- Company Addresses
- Index to 1996 Features



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- ☐ **UNSELECTED switches** for monitoring any combination of unselected lines.
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- ☐ **RX ALL switch** for monitoring all unselected lines
- ☐ **Separate speakers and volume controls** for "selected" (TX / RX) and "unselected" (RX-only) audio
- ☐ **GROUP SELECT switch** for easy selection of TX / RX line combinations
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- ☐ DCA-3 external three-line adapter for DC-format lines
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- ☐ Cross mute
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- ☐ Rack-mount kit

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## features

### 8 1997 Buyers' Guide

MRT's annual directory provides you with essential information you will want to retain for quick reference throughout the year. Products and services are listed, as well as brand names and company addresses.

### 10 Product Directory

More than 90 categories of equipment for the mobile radio industry are listed, as well as more than 900 suppliers. Advertisers in this issue are listed in blue ink.

### 84 Services Directory

Mobile radio services such as accounting and billing, consulting, repair, technician training, tower installation and tower space rental are listed, as well as the companies that provide them. Advertisers in this issue are shown in blue ink.

### 92 Company Address

An alphabetical listing of more than 900 suppliers and service providers appears in this section. Regional sales contacts are listed for some of the advertisers in this issue.

### 130 Brand Names Directory

Sort out which company is associated with specific mobile radio industry brand names in this alphabetized listing.

### 135 Index to 1996 features

All of the 1996 articles plus two departments, *Regulating Technology* and *Technically Speaking*, are indexed by subject. Keep this as a reference to find articles printed in 1996. An alphabetized author index lists all of the features and columns that an author has written during the year.

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Robert H. Schwaninger Jr.  
Anytime, anywhere.

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Find advertisers quickly.

# Buyers' 1997 Guide

**On the cover:** MRT's 10th annual Buyer's Guide serves as the year-round reference for buying in 1997. More than 900 companies are listed representing more than 90 categories of products and services.

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# 1997 Buyers' Guide

Welcome to the 10th annual directory issue of *Mobile Radio Technology*. We intend it to be a complete product and services source for the mobile communications industry, including mobile radio, radiopaging, mobile data and vehicle location, with additional information for the dealer and cell-site segments of cellular telephony.

Industry authorities and our editorial advisory board helped us to establish product and services categories and to compile data, and many suggestions for additional categories submitted by readers and vendors have been incorporated. Questionnaires were mailed to suppliers and service companies, asking them to list the products and services they offer. By the way, if you represent a supplier that did not receive a questionnaire and you want one, send your company name and address to the directory issue editor, Carl Bentz, at *Mobile Radio Technology*, P.O. Box 12901, Overland Park, KS 66282-2901.



## **Category Index ..... page 8**

Various categories of products and services are listed on page 8. You can use this index to narrow your search for a particular kind of product or service. When you turn to the page indicated for a given category, you'll find the corresponding list of suppliers.

## **Product Directory ..... page 10**

The Product Directory lists more than 90 categories of equipment and suppliers. Under each heading is a complete list of the companies that indicated they provide that particular product. Companies that are advertisers in this issue are listed in blue, with page number references to the pages where their advertisements appear.

## **Services Directory ..... page 84**

The Services Directory lists more than 10 categories of services offered by various vendors. The names of the suppliers are listed under the headings, and, as with the Product Directory, names of companies that are advertisers in this issue are listed in blue, with page number references to the pages where their advertisements appear.

## **Company Addresses ..... page 92**

Following the Services Directory, you will find information about the companies named in the Buyers' Guide arranged alphabetically by company name. Information includes company postal mailing addresses, E-mail addresses, telephone numbers and facsimile numbers. In addition, for many of the manufacturers that advertise in this issue, regional sales offices are listed.

## **Brand Names Directory ..... page 130**

If you remember a brand name and not the product or service category or the name of the supplier, try looking up the brand name in the Brand Names Directory. Many suppliers listed their brand names on the questionnaire for inclusion in this directory.

## **For more information ..... page 169**

You can send all your requests for information from advertisers in this issue at once by using the Fast Fact Card. Circle the Fast Fact number found with each advertisement and mail the card. The card is valid until November 1997.

We welcome any suggestions you may have for making the Buyers' Guide more useful to you.

—Don Bishop



# Multiple choice tests.



Whether you're testing two-way radios, pagers, cell phones or cell sites, Motorola Communications System Analyzers pass the toughest tests. And for testing ASTRO<sup>®</sup>, iDEN<sup>™</sup>, SmartZone<sup>™</sup>, SMARTNET<sup>™</sup> or SECURENET<sup>™</sup> digital radios today, Motorola Communication Test Equipment is the *only* correct answer.

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### 1. Which of the following products best suits your need?

- ☐ The value-priced R-2550 (AA)
- ☐ The feature-packed R-2600 (AB)
- ☐ The R-2660 with 3:1/6:1 iDEN<sup>™</sup> test capability (AD)
- ☐ The R-2670 with ASTRO<sup>®</sup>, iDEN<sup>™</sup>, SmartZone<sup>™</sup>, SMARTNET<sup>™</sup> and SECURENET<sup>™</sup> capabilities (AE)
- ☐ The R-2680 with optional MPT 1327 (AH)
- ☐ The Micro RF Isolator (AF)
- ☐ All of the above (AZ)

### 2. What do you usually test?

- ☐ Two-way radios (JA)    ☐ Pagers (JE)
- ☐ Trunked radios (JF)    ☐ Cell sites (JT)
- ☐ Encrypted systems (JG)    ☐ Cell phones (JU)

### 3. When do you plan to buy test equipment?

- ☐ In 1 month (HA)    ☐ 7-12 months (HC)
- ☐ 2-6 months (HB)    ☐ More than a year (HD)

### 4. Do you buy test equipment in your company or does someone else?

- ☐ I do (EA)
- ☐ Someone else \_\_\_\_\_ (EB)

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
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What you never thought possible.<sup>™</sup>



## 1997

### January

22-23—**Outlook for the Mobile Communications Industry Conference**, sponsored by Frost & Sullivan, Westin Galleria Hotel, Dallas. Contact: 415-961-9000.

### March

3-5—**Wireless**, sponsored by the Cellular Telecommunications Industry Association, Moscone Convention Center, San Francisco. Contact: 202-785-0081.

23-26—**Energy Telecommunications and Electrical Association**, New Orleans Convention Center, New Orleans. Contact: 214-235-0655.

### April

22-24—**International Wireless Communications Expo**, co-sponsored by *Mobile Radio Technology*, Las Vegas Sands Convention Center, Las Vegas. Contact: 800-288-8606.

### May

5-7—**Vehicular Technology Conference**, sponsored by IEEE Vehicular Technology Society, Hyatt Regency at Civic Plaza, Phoenix. Contact: Wendy Rochelle, 908-562-3870; Fax 908-981-1769.

### June

2-5—**Supercomm**, sponsored by USTA and TIA, New Orleans Convention Center, New Orleans. Contact: 202-326-7300.

3-5—**Canadian Wireless**, sponsored by the Canadian Wireless Telecommunications Association, Montreal. Contact: 613-233-4888.

9-11—**Communications Expo/Show of the Americas**, Miami Convention Center, Miami. Contact: Jackie Gonzales, 305-412-9000.

16-20—**UTC National Conference & Exhibition**, sponsored by UTC, The Telecommunications Association, Oregon Convention Center and Red Lion Lloyd, Holiday Inn, and Travelodge Hotels, Portland, OR. Contact: 202-872-0030.

### August

10-14—**International Association of Public-Safety Communications Officials (APCO) National Conference**, Charlotte, NC. Contact: 904-322-2500.

### September

10-12—**Personal Communications Showcase**, sponsored by the Personal Communications Industry Association, Dallas Convention Center, Dallas. Contact: 800-326-8638.

### October

27-29—**Wireless Apps**, sponsored by the Cellular Telecommunications Industry Association, Seattle Convention Center, Seattle. Contact: Francesca Dea, 702-739-4025 or Tim Ayers, 202-736-3203.

### November

12-16—**Communications Marketing Conference**, sponsored by the Communications Marketing Association, Holiday Inn International Drive Resort, Orlando, FL. Contact: Bernie Brownson, 303-371-8182.

21—**Radio Club of America**, Communications Symposium, 88th Anniversary Dinner and Awards Presentation, New York Athletic Club, New York. Contact: Gerri Hopkins, 908-842-5070.



## Mobile Radio Technology

Technical information for paging, SMR and private wireless networks

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**BACK ISSUES:** Copies of most issues printed within the past two years are available for \$10 per issue; older issues are not. Call customer service at 800-441-0294.

**ARTICLE PHOTOCOPIES:** Photocopies of individual articles printed since January 1987 may be ordered from UMI Information Store at 800-248-0360.

**MICROFILM COPIES:** Copies of issues by calendar year are available on microfilm for January 1992 through June 1996. Older issues are scheduled for microfilming later. Write UMI at P.O. Box 1346, Ann Arbor, MI 48106-1346, or call 313-761-4700 or 800-521-0600, Serials customer service, ext. 2895.



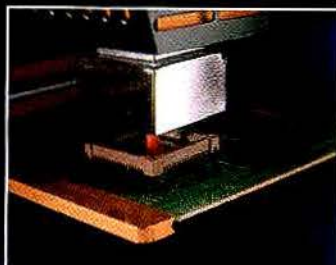
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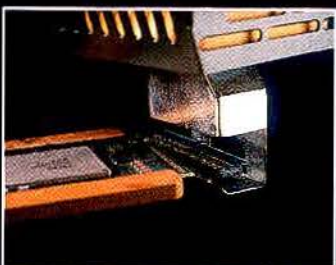
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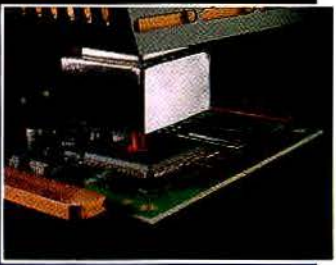
SMT Connector



580 BGA



Pin Grid Array



208 QFP



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## ...lower prices!



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FAX: 770-729-9567  
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FAX: 815-744-8996  
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# Product Directory

## Air Conditioning for Shelters

Auto-Comm Engineering



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Contor Terminals  
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Liebert



Sun Mfg

## Airtime Billing Eqpt

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**Photovoltaic, Thermoelectric,  
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Energy System  
Zirco

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Amplifier-Chargers**

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Cavity, Ferrite & Ferrite Hybrid  
Combiner Multicouplers;  
Transmitter-Receiver  
Multicouplers**

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Group)  
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Electronic Products  
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Environmental Technology



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Glenayre  
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Radio Control Systems (RCSI)  
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Salisbury Engineering  
Santa Fe Distributing  
Scala Electronic  
Secom Systems  
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Communications Associates  
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Services  
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Crescent Communications  
CSS Power  
Cushcraft  
D&R Associates  
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Sector  
National Radio  
NCG/Comet Antenna  
Olympic Radio  
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Stealth Network Technologies  
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**Andrew** ..... 99, 101  
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AF CommSupply  
Antenna World  
Austin Antenna  
BearCom LP  
Bear Communications  
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Canadian Marconi  
Cartwright Communications  
Cellnet Communications  
Cellular Accessory Warehouse  
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Cellular Solutions  
Centurion Communications  
Codan  
Com-Rad Industries  
Comark Distributing  
The Communication Express  
Communications & Signals  
Communications Associates  
Comsat RSI/Jefa Wireless  
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Comtelco Industries  
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Cushcraft  
D&R Associates  
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DP Electronics  
Eastcom Industries  
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ExCellular Communications



Gabriel Electronics  
E Gracey Electronics  
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 Stealth-Cellular IC  
 Stuart Electronics  
 System Perfect  
 Tactical Electronics  
 Talley Communications  
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**Trylon-TSF** ..... 127  
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 Wisco International  
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### Antennas, Portable

AAT Communications Systems  
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 Paragon Engineering  
 PMC Associates  
 Portable Depot  
 Procomm USA  
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RF Products  
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 Secom Systems  
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## SINCLAIR

Sinclair Technologies—Sinclabs  
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 Racal Canada  
 Stuart Electronics  
 Talley Communications  
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### Attenuators & Dummy Loads

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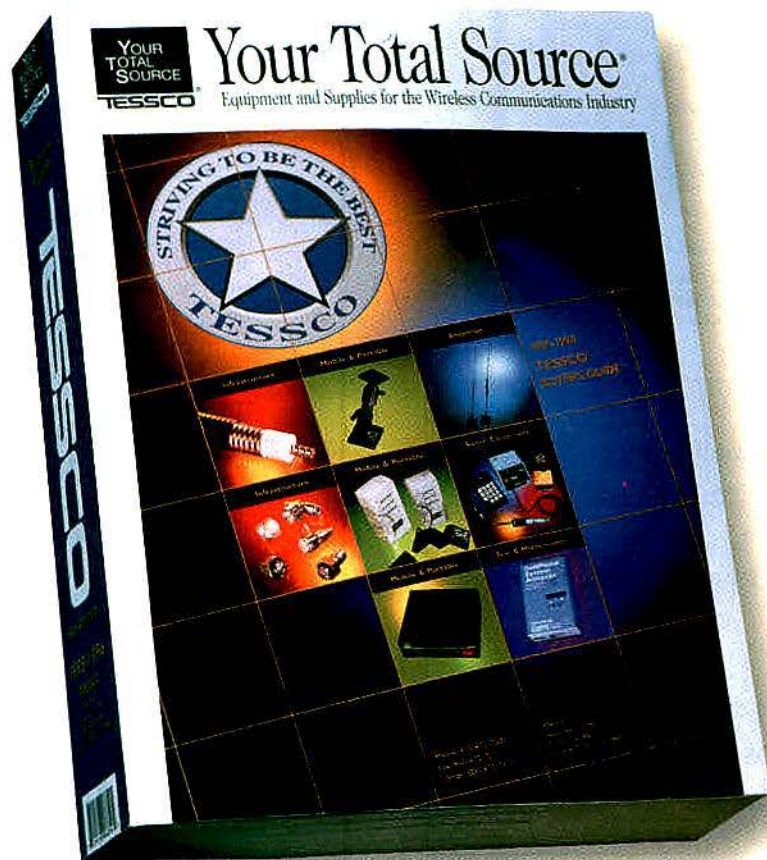
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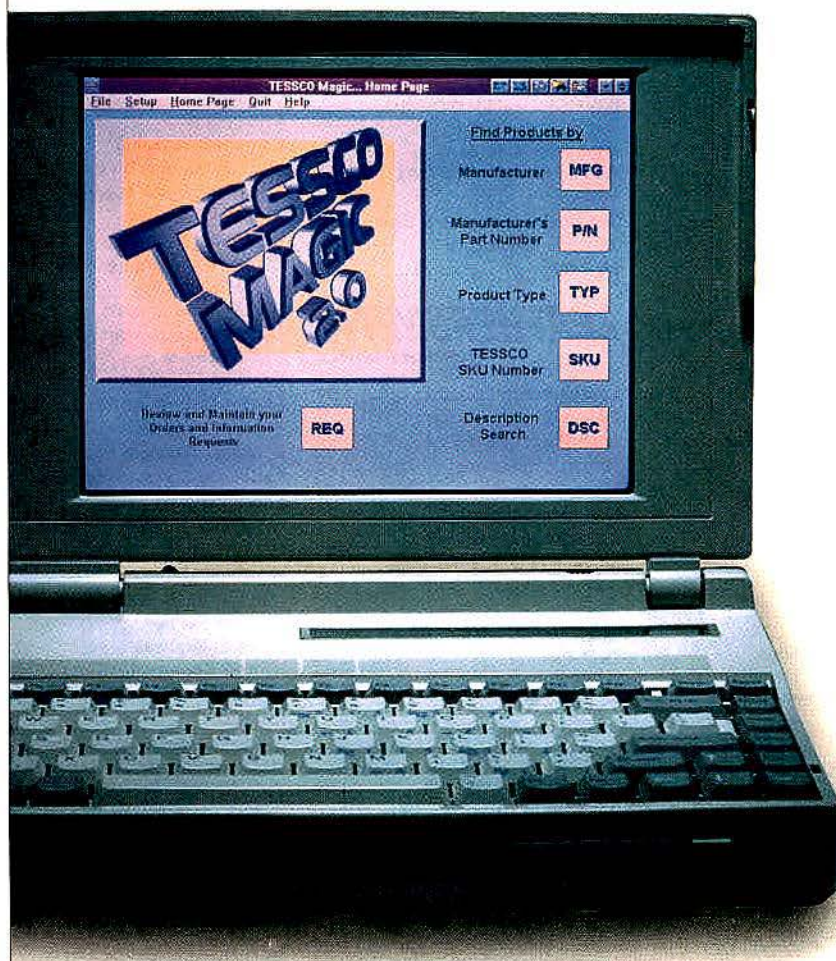
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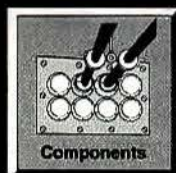
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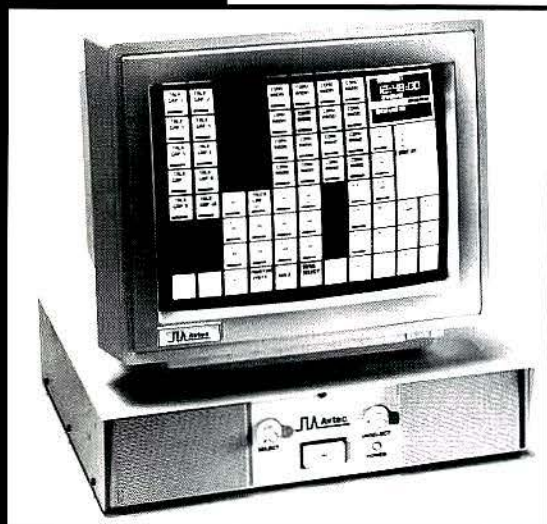
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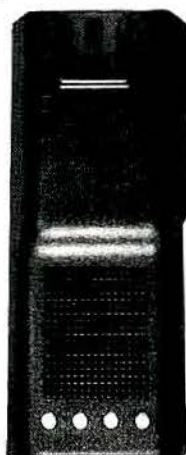


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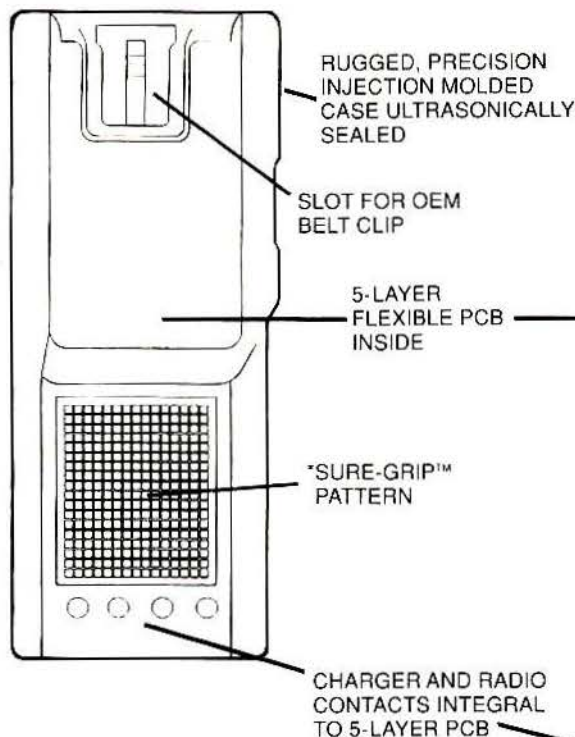
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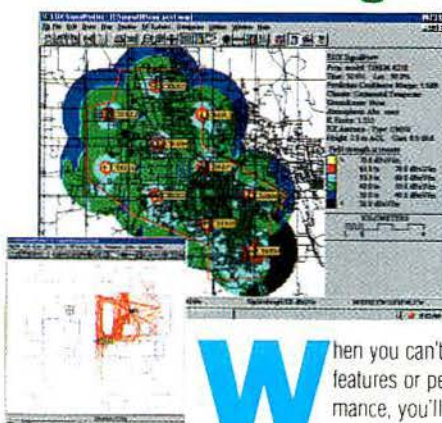


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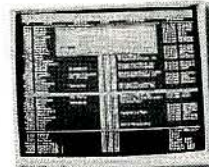
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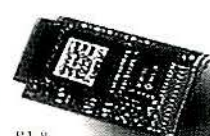
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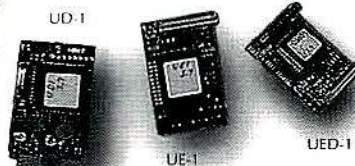
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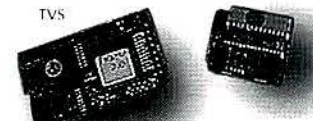
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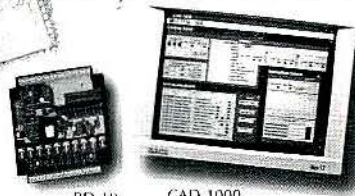
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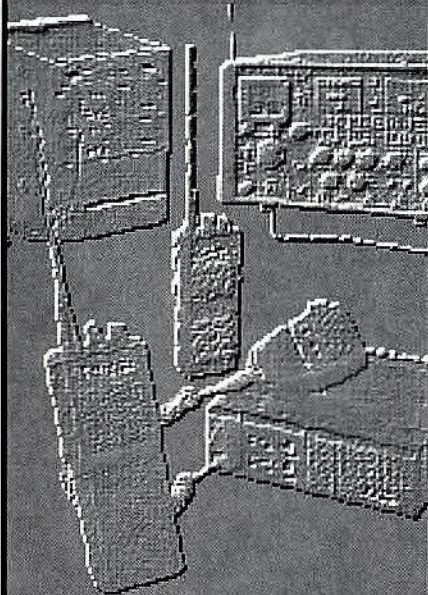
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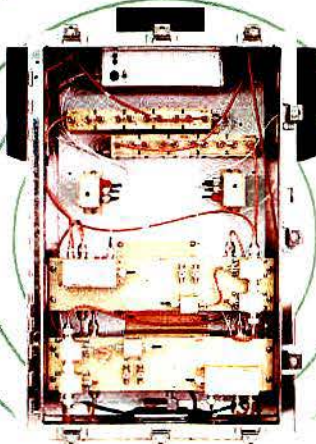
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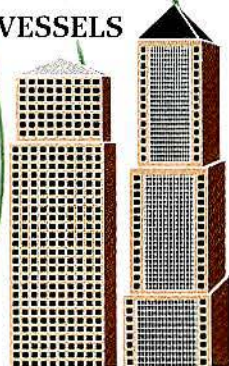
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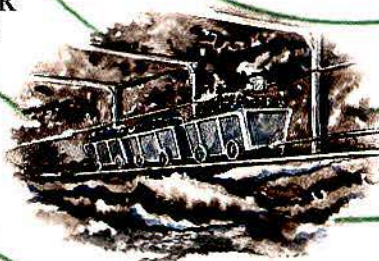
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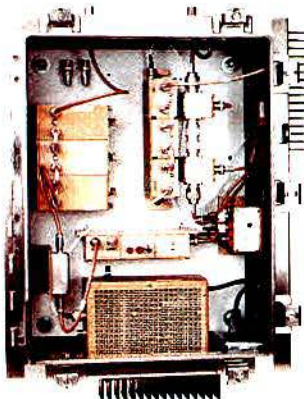
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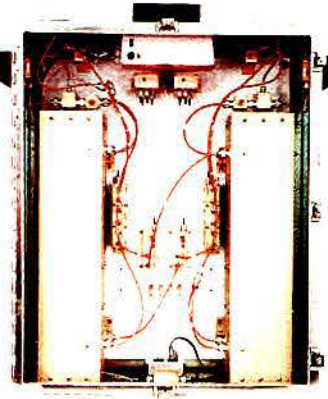
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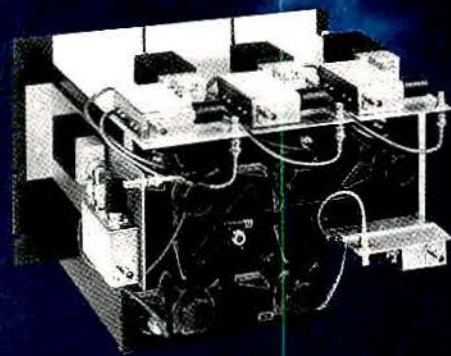
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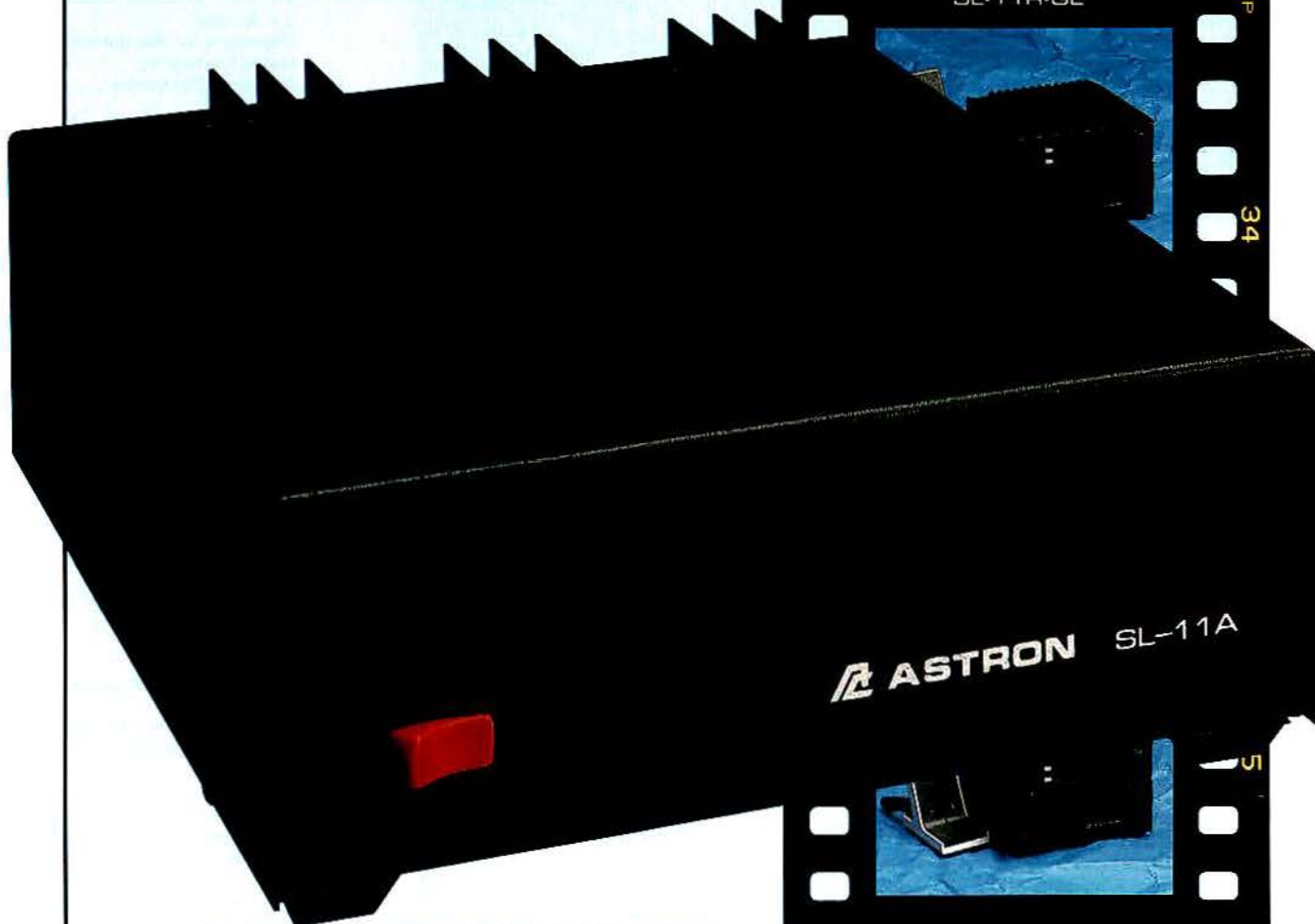
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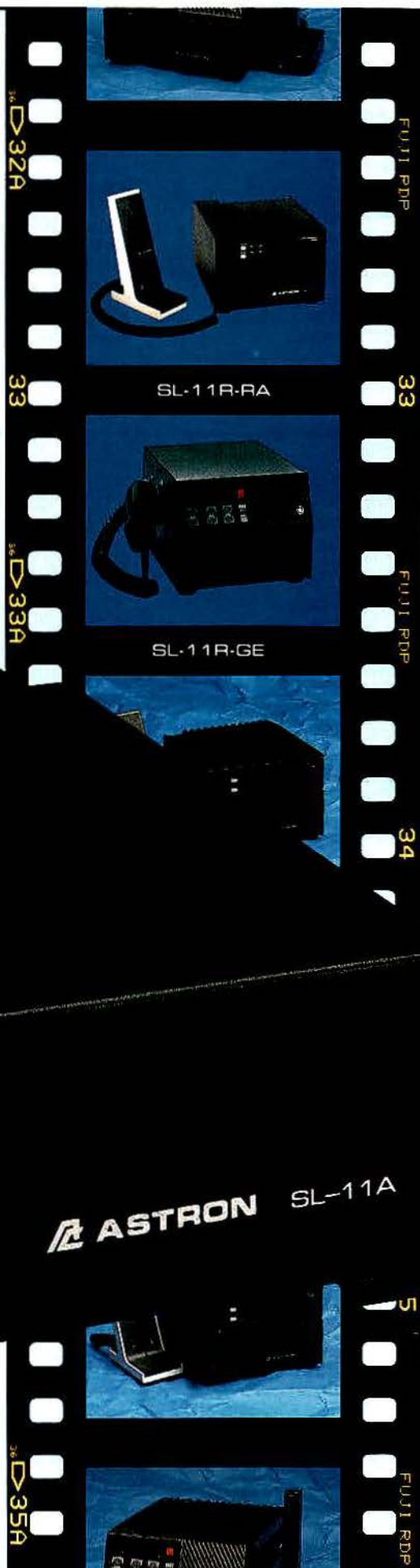
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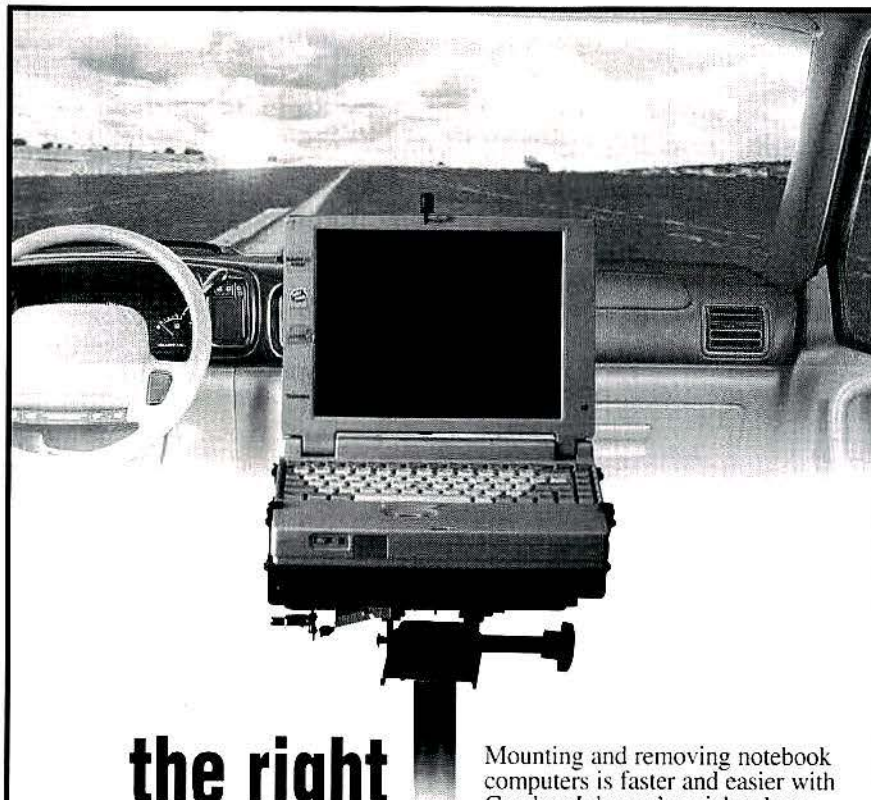
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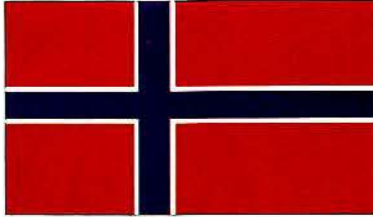
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# What do these nine national police forces have in common?



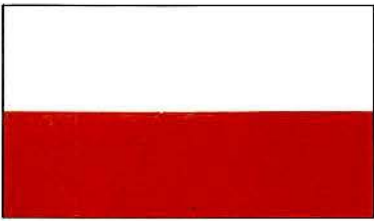
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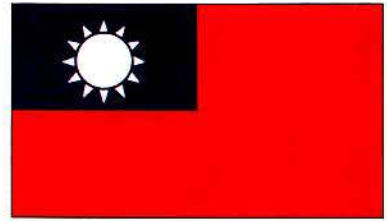
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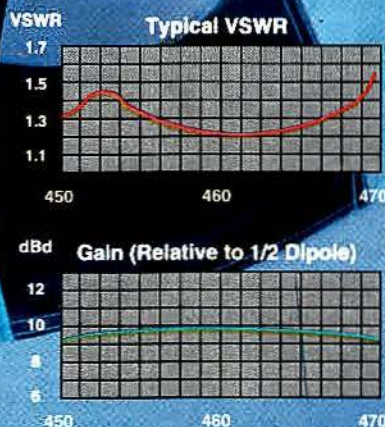
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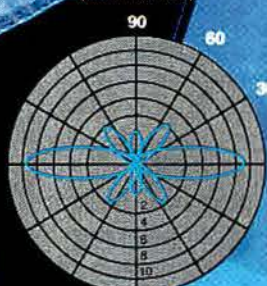
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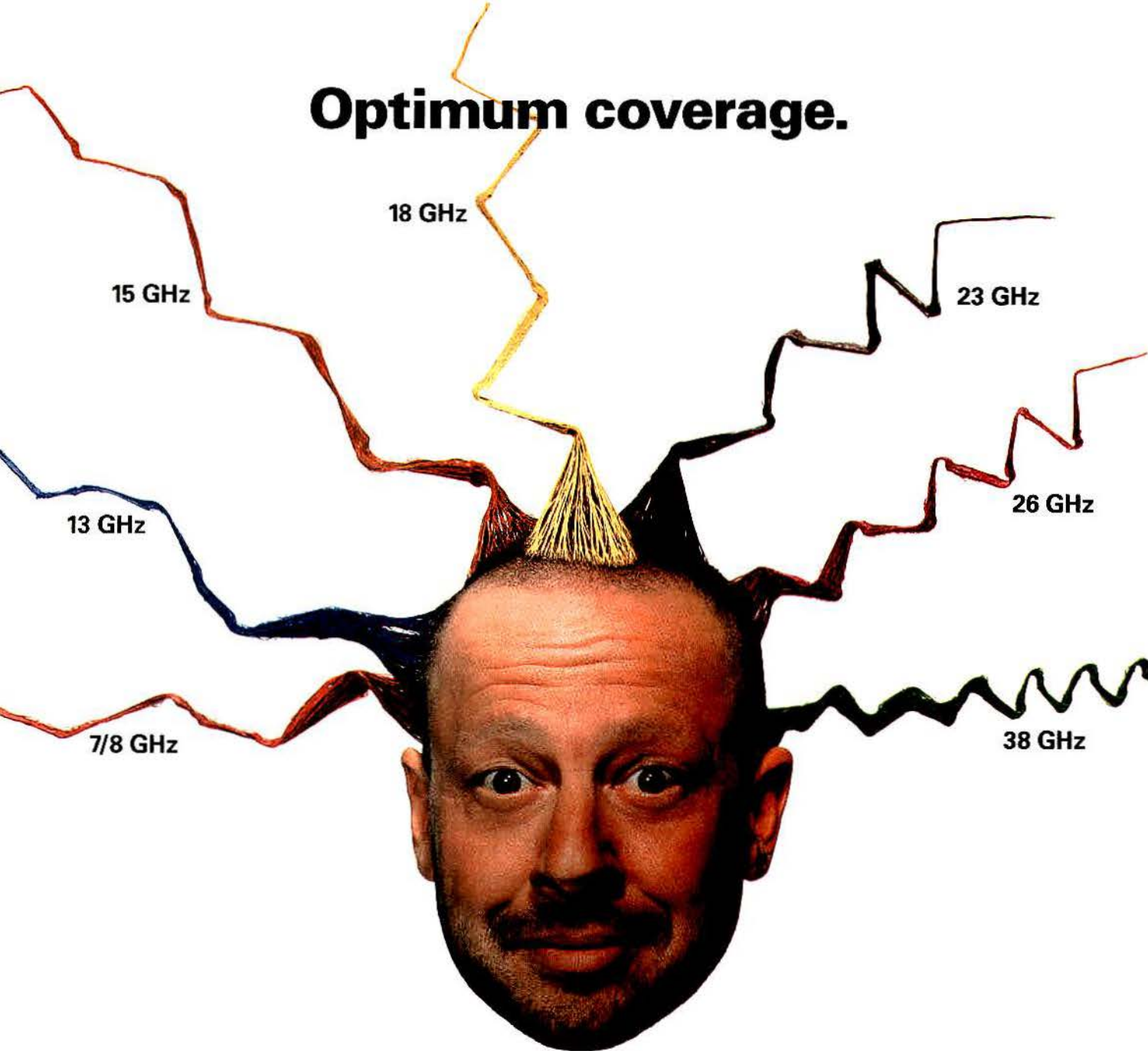
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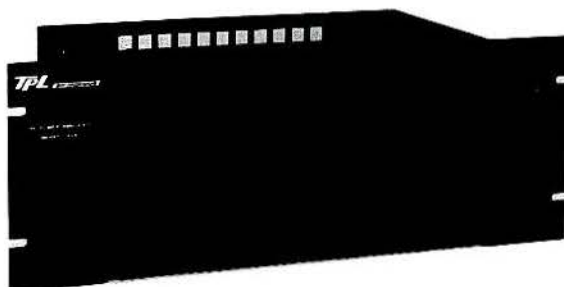
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# fewer dropped calls, longer. more battery life, airtime

## Over 1,000,000 dropped calls each day

Dropped calls, dead batteries, missed opportunities? Sound all too familiar? According to industry estimates, frustrated cellphone users experience over 1,000,000 dropped calls each day. Larsen's Uplink™ powered signal amplifier provides the solution...

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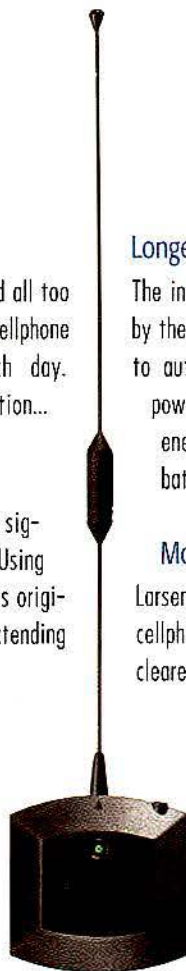
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Larsen's Uplink significantly increases the transmit range of your cellphone, particularly in fringe areas. Extended transmit range, clearer signal and increased battery life mean more airtime for you.

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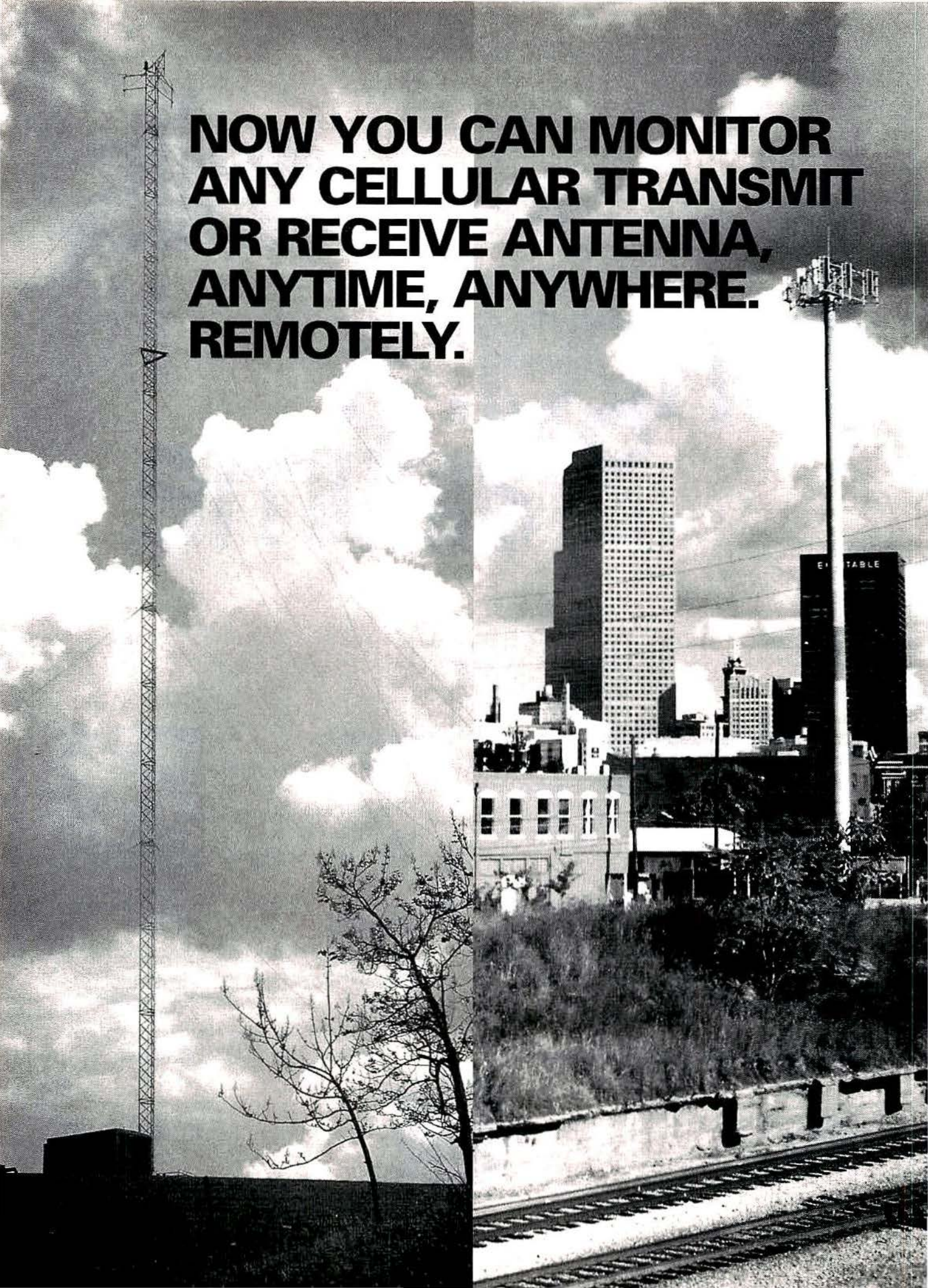
The Uplink installs easily into any vehicle and will work with any cellular phone.



 **Larsen®**



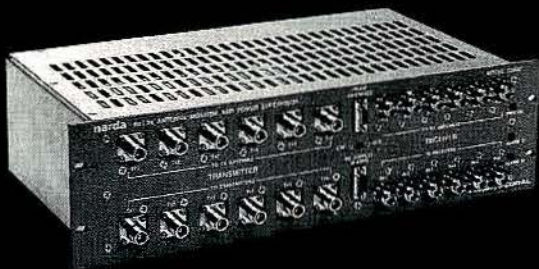
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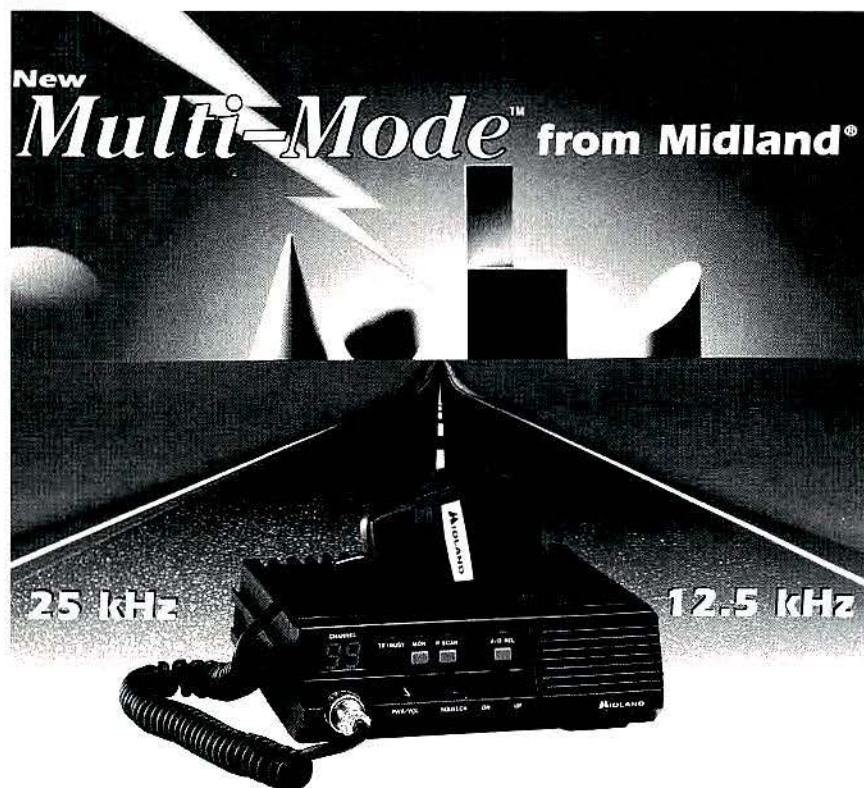
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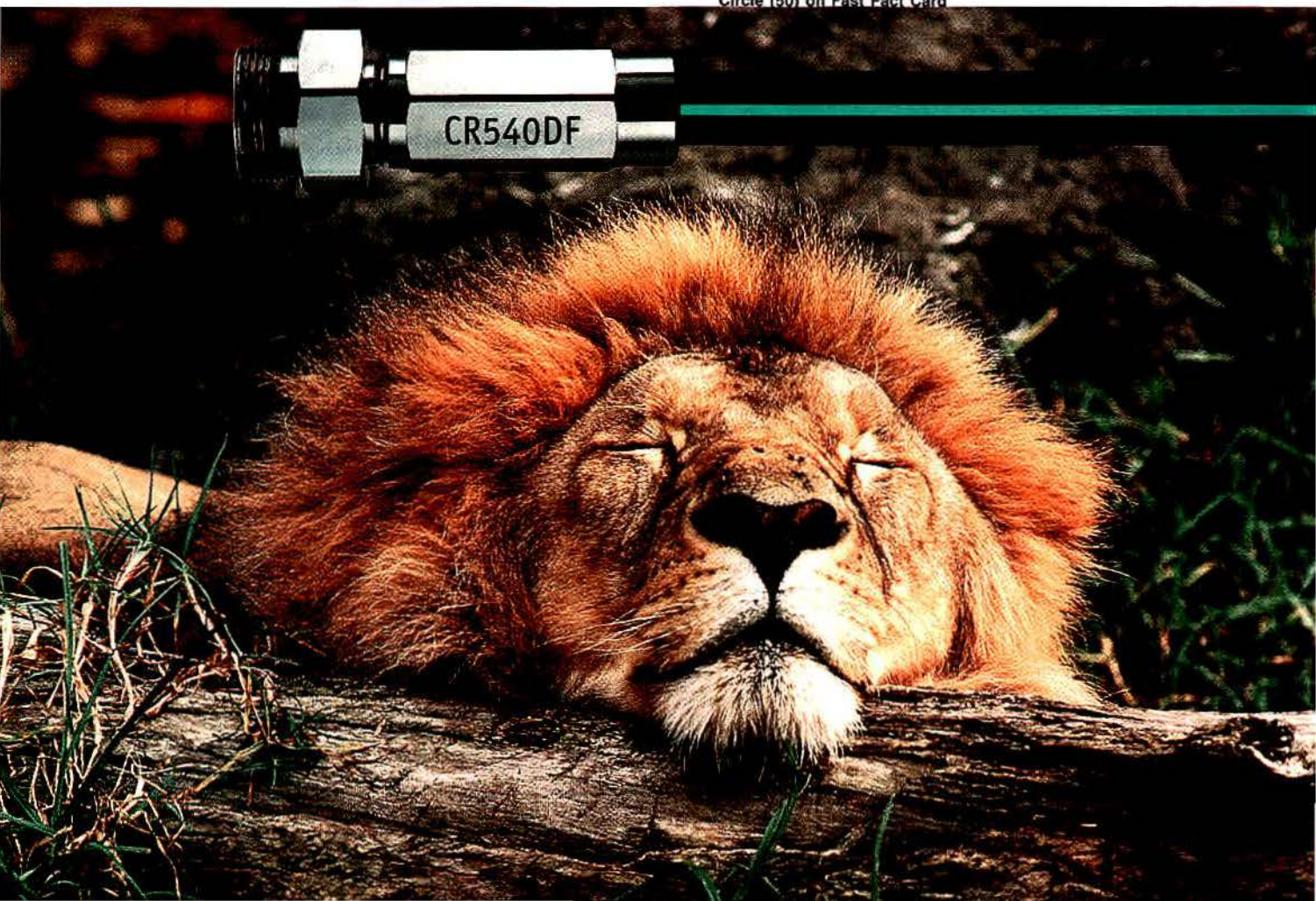
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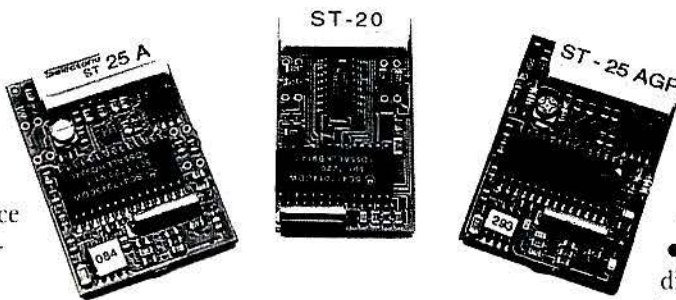
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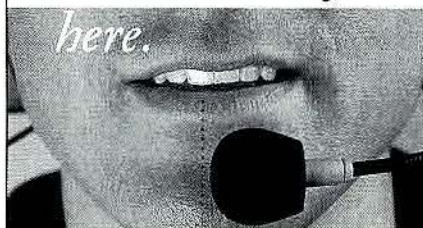
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# When Every Second Counts, Rely On Orbacom's TDM-150 CRT-Based Console System For Your Critical Emergency Communications Needs



Shown Above: The Lancaster County, Pennsylvania, 911 Communications Center With Orbacom's TDM-150 CRT-Based Console System.



Easy-To-Use Primary Operating Screen. Resembles Traditional Radio Channel Modules; Control Modules, As Well As Other Displays, Can Be Adjusted To Meet Your Unique Dispatch Operation Conditions.

# ORBACOM

As an established leader in the industry, with decades of experience in the design and manufacture of sophisticated communications consoles, Orbacom is the name to trust for your community's critical emergency call and response situations. Orbacom's new generation of TDM-150 Communications Control Consoles is not only state-of-the-art, but also sets the stage for efficiently expediting your immediate emergency communications needs, as well as effectively fulfilling your ever-expanding future response requirements. Some outstanding features of Orbacom's TDM-150 include Multi-Level Trunking Interfaces, On-Line Screen Changes,

"Drag & Drop" Instant Screen Creation, Multi-Function Screen Grid, On-Screen Alarm Notifications, Windows™ Applications and many more user-friendly operations. The ultimate bottom line is that you and your community will appreciate knowing that when it comes to protecting life and property, you can depend on Orbacom's technology to help you transmit vital instructions, *when every second counts*. For more information, please call or fax in your request for free literature: 609-829-4455/fax:609-829-6980.

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# 9-1-1



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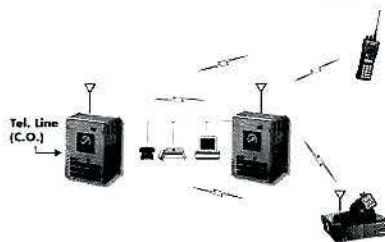
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**Standard Communications ..... 71**  
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### Portable

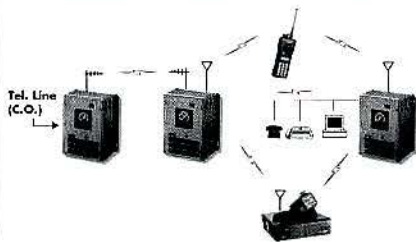
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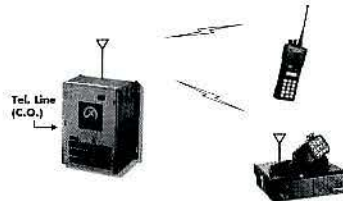
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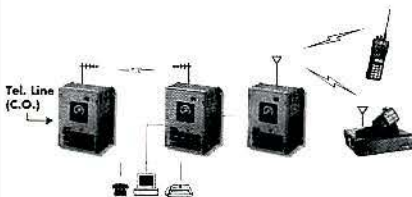
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 Glenayre  
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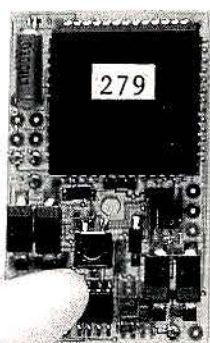
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## Selective Calling – See Signaling

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# The **Xplorer** Test Receiver

Because **his**  
**Business**  
depends on  
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**Business!**

**NEW**



#### Specifications

Frequency Range: 30MHz -2GHz  
Modulation: FM, Deviation <100KHz  
Freq. Response: 50 - 3000Hz  
Auto Sweep Time: <1Second  
Input: 50Ohm, -59dBm @100MHz  
-25dBm @1GHz  
Display: 2 line LCD w/ EL backlight  
Power: Internal NiCad Pack, 7.2V 850mA

#### Decoding Capabilities

CTCSS Tones: 52  
DCS Codes: 106  
DTMF characters: 16:1234567890\*#ABCD

For Commercial and Mobile Radio testing, the Optoelectronics Xplorer stands alone. Let the Xplorer perform all your quick radio checks, instantly determining the radio's frequency, CTCSS, DCS, DTMF, deviation or signal strength. The Xplorer automatically locks on to any nearfield signal from 30MHz-2GHz in less than a second.

There is no setup necessary-Whether you're in the field or in the shop, the Xplorer is the portable, compact and economical solution for any two-way communications business.

#### FEATURES:

- Nearfield receiver, sweeps 30MHz-2GHz in <1 second
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- Lockout up to 1000 frequencies
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- PC interface for downloading data from memory
- FM demodulation / Built-in speaker
- Auto or manual frequency hold
- Maximum nearfield reception / Up to 1/4 mile away

#### Communications Decoding

The Xplorer's 2 line LCD can selectively switch between CTCSS, DCS, and DTMF displays.



CTCSS Display



DCS Display



DTMF Display

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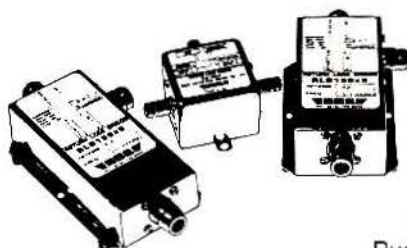
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## VSWR BRIDGES & TEST CABLES

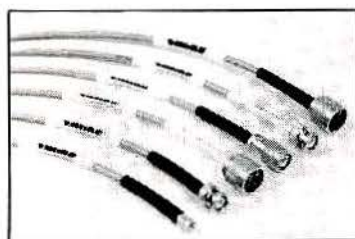


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Using the EAGLE return loss bridge allows frequency domain reflectometry tests to be made easily and inexpensively. There is no need to spend thousands of dollars on a dedicated antenna tester. Simply use the EAGLE bridge with your present spectrum analyzer and tracking generator. This technique is described in our free application note. See offer below.

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Shure ModuLink handheld microphones connect easily to virtually all popular radio transceivers with no hardwiring. Simply snap the correct cordset into the ModuLink microphone and the transceiver. And in just 30 seconds, your customer is ready to roll.

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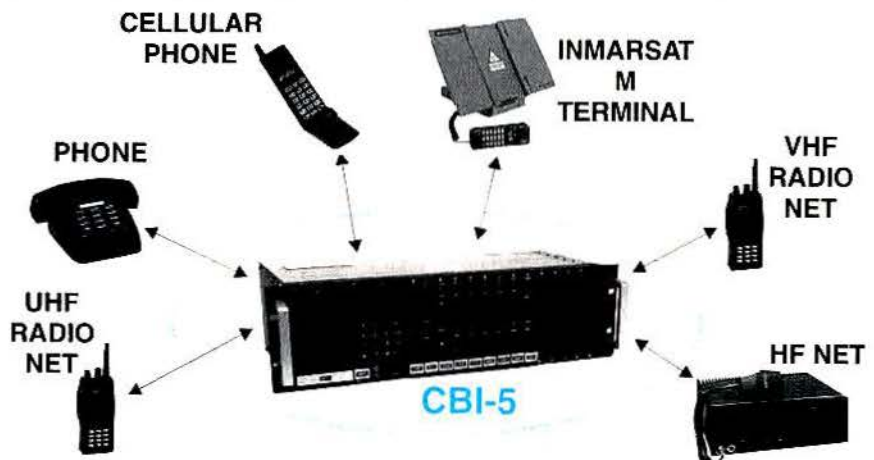
# CBI-5 Multi-Tasking Crossband Interconnect

Interconnect any 5 nets and single phone line (other configurations optional)

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- ♦ VHF Low Band
- ♦ VHF High Band
- ♦ HF
- ♦ PSTN
- ♦ SATCOM
- ♦ 800 MHz Trunking
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- ♦ Cellular
- ♦ and others

DTMF Control

DSP VOX



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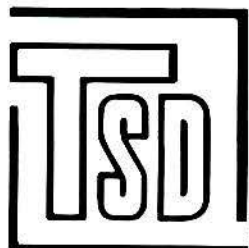


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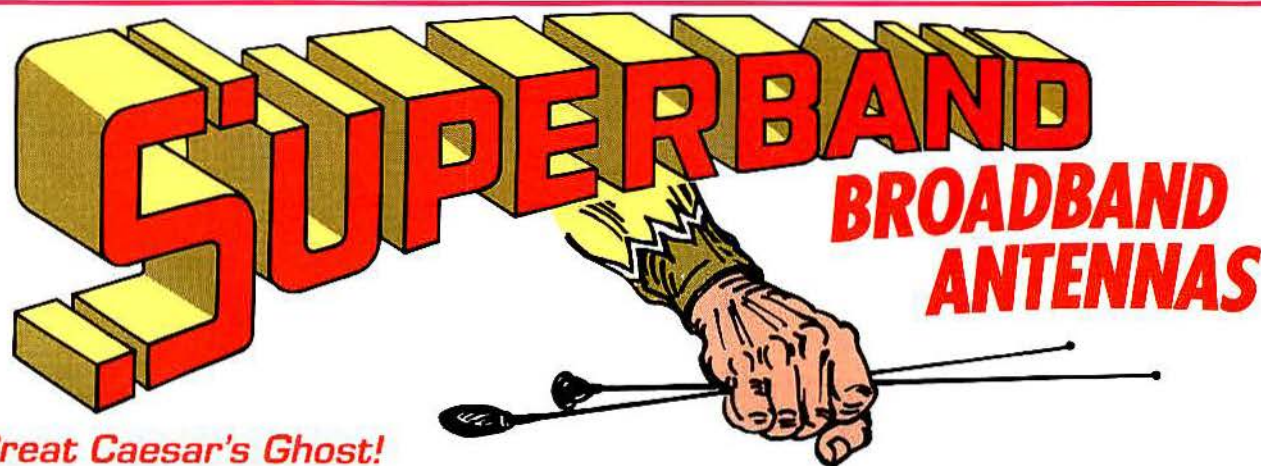


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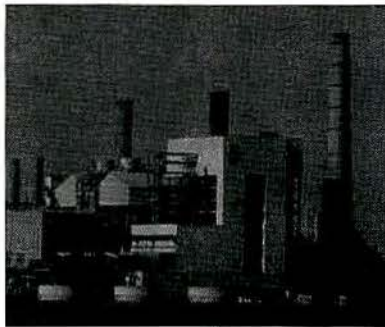
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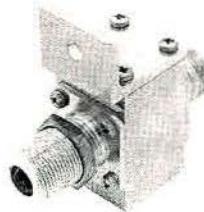
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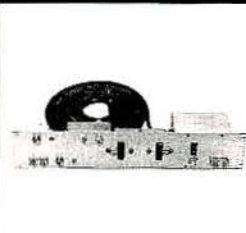
# Grounding & Lightning Protection Solutions



DC BLOCKED 1.5MHz  
TO MICROWAVE 20GHz



BROADCAST & MILITARY  
TO 80 kW



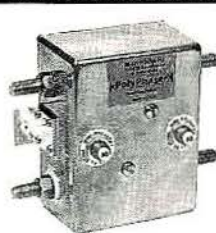
RACK PANEL PROTECTOR  
120/240Vac, 15-20A



UNI-KIT COAX  
CABLE GROUNDING



DATA/PHONE PUNCH  
DOWN BLOCK



SOLAR/BATTERY



PHONE LINE/LAN/T-1



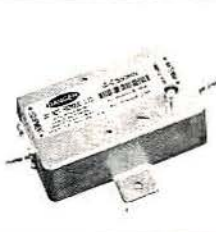
POWER PROTECTOR  
120/240Vac, 15-20A



1.2 TO 20GHz MICROWAVE  
& DOWNCONVERTERS



IN-LINE POWER MAINS



COAX PROTECTOR  
WITH SAMPLER PORT



SHUNT-TYPE  
POWER MAINS



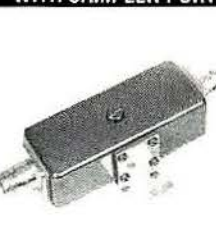
CELLULAR PROTECTORS  
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STRIKE COUNTERS  
TOWER/POWER/PHONE



GROUNDING COMPONENTS



LAN/VIDEO



GLOBAL POSITIONING  
SYSTEM (GPS)



UHF COMBINERS



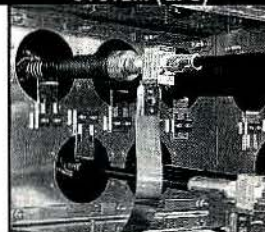
POWER SUPPLY  
PROTECTOR



COPPER CLEANING  
KIT (CCK)



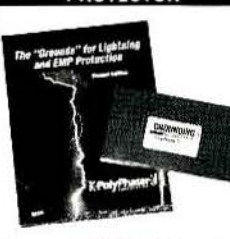
TVRO PROTECTOR  
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B&C Communications



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ICOM America  
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Wisco International

## Transceivers, FM Conventional, Base, Mobile and Portable

Adams Distributing  
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Auto-Comm Engineering  
B&C Communications  
Buy-Comm  
California Radio  
Canadian Marconi  
Carlson Communications  
Centurion Communications  
CMC Enterprises  
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Teletec  
Uniden America  
Vertex/Yaesu USA ..... IBC  
Wetec Electronics  
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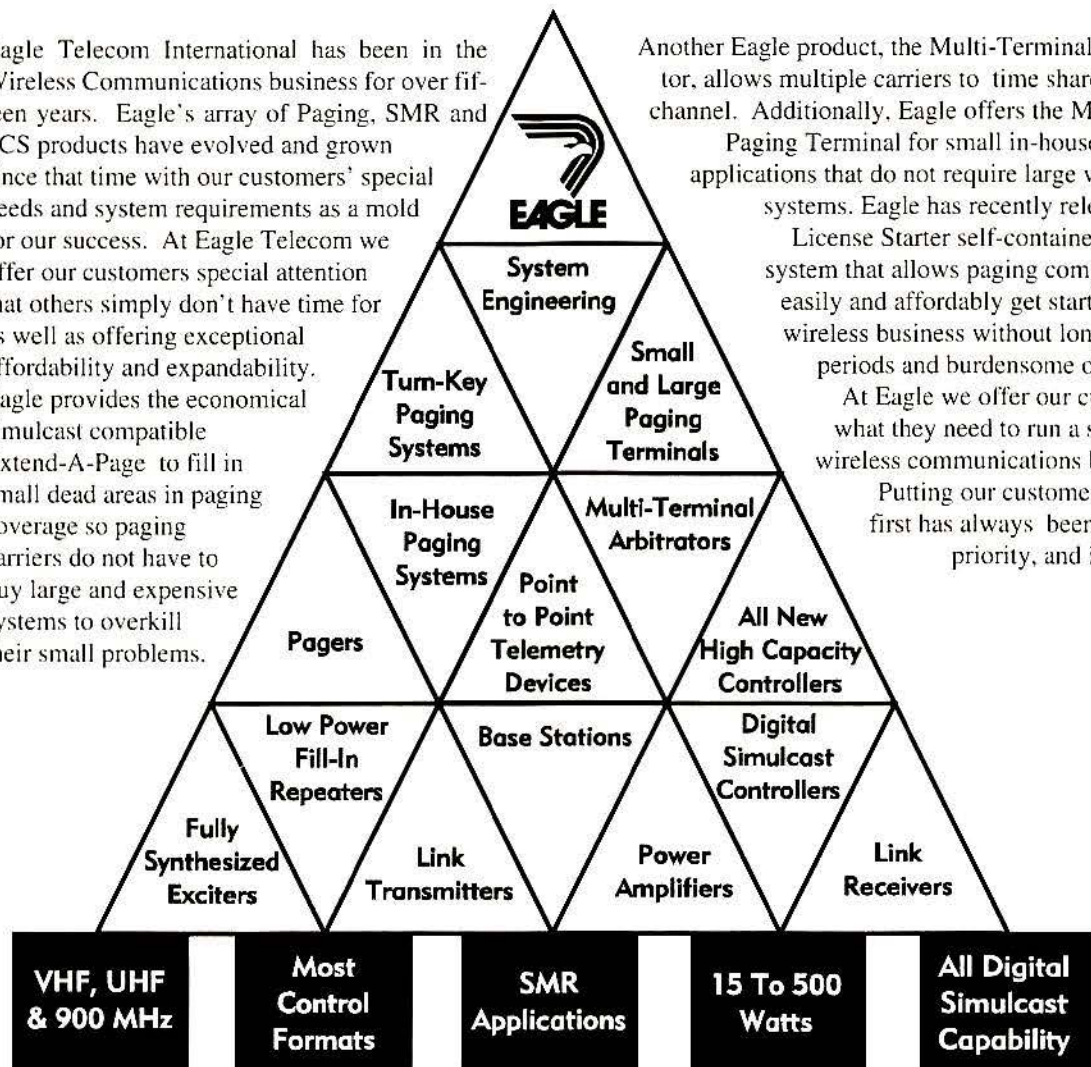
Eagle Telecom International has been in the Wireless Communications business for over fifteen years. Eagle's array of Paging, SMR and PCS products have evolved and grown since that time with our customers' special needs and system requirements as a mold for our success. At Eagle Telecom we offer our customers special attention that others simply don't have time for as well as offering exceptional affordability and expandability. Eagle provides the economical simulcast compatible Extend-A-Page to fill in small dead areas in paging coverage so paging carriers do not have to buy large and expensive systems to overkill their small problems.

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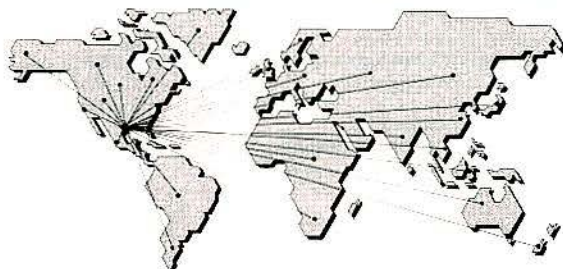
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### Portable

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### Transceivers, HF SSB

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### Uninterruptible Power Systems

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Diplomat Comm Systems  
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Eastcom Industries  
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D&L Communications  
Delcom Industries  
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SWS Security  
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C W Wolfe Communications  
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### Voice Processing and Message Systems

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Microwave Engineers  
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ElectroCom Communication  
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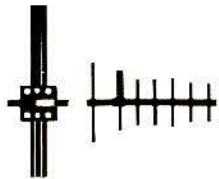
The Industry's

# 10 MOST WANTED

Considered Armed & Dangerously Affordable

Industry Top Ten Product

**ANT940Y10-WR**, also known as Yagi Antenna. born 6-24-74; 2.5 lbs; 24" x 9"; Known associates: likes to hang out in dingy, dismal areas. hvy bld; blk TXYLAN coated. Known to violently resist corrosive gases, ultraviolet radiation, salt spray and acid rain. Wanted for directional control.



PRINTS AVAILABLE

Industry Top Ten Product

**TS4680**, also known as Cross Band Coupler. born 2-10-86; size 6.6 x 1.5 x 0"; 1 lb; hvy const; 400 watts; blue finish; tower mountable. Wanted by tower operators for multiple transmissions of 450-860 equipment.



PRINTS AVAILABLE

Industry Top Ten Product

**TC860**, also known as Celco Ceramic Trunking Combiner. born 5-25-91; size 7x19x14"; 36 lbs; rugged bld; 125 watts, alum finish. Wanted by SMR operators who want only the best.



PRINTS AVAILABLE

Industry Top Ten Product

**ANT450D3**, also known as Dipole Array Antenna. born 9-14-58; known associates: other antennas in other freq bands and gain. hvy bld; blk TXYLAN coated. Known to violently resist corrosive gases, ultraviolet radiation, salt spray and acid rain. Wanted by tower operators with the worst possible problems.



PRINTS AVAILABLE

Industry Top Ten Product

**Model 44AP**, also known as the Broadband RF Wattmeter. born 6-11-78; weight 4 lbs; rugged bld; 500 watts; gray comp; operates alone. no known associates; distinguishing marks: leather band on top, sample port right side. No known enemies, has been spotted worldwide.



R. Middle

Industry Top Ten Product

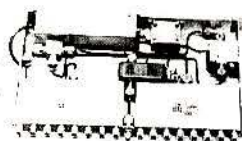
**PMU1C1S**, also known as Power Monitor Unit. born 4-23-95; sml bld; blk, red eyes glow in dark. Wanted for monitoring ant VSWR and TX power. Notorious for working multiple freq in all bands. Known associates RS232 and RS485.



R. Index

Industry Top Ten Product

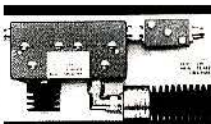
**TWR816-860-1RTT**, also known as Compact Receiver Panel. born 8-14-93; exceptional small build, likes to associate with multiple frequencies. Quiet 2.5 dB noise; modular; has been known to redundantly switch to 2nd channel if injured; likes living in harsh locations. Wanted for resisting interfering signals.



PRINTS AVAILABLE

Industry Top Ten Product

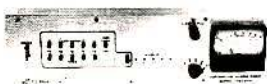
**TS450PB1**, also known as IM Suppression Panel. born 7-12-75; rugged bld; black & blue marks on body; 5 lbs; 19"x5.25"x.50 wa; 60 dB; wanted by the FBI for killing intermodulation; likes isolation. Reward is offered for protectionism.



PRINTS AVAILABLE

Industry Top Ten Product

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PRINTS AVAILABLE

Industry Top Ten Product

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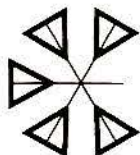
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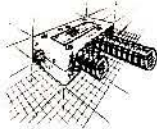
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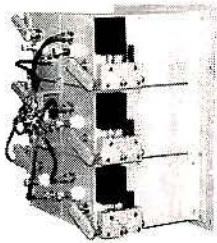


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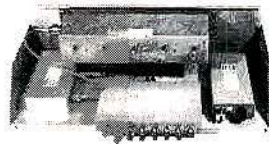
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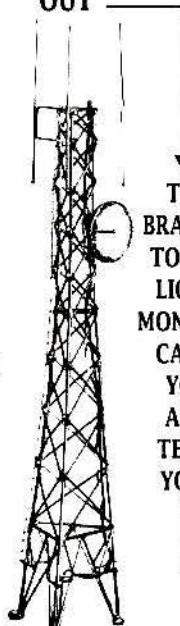
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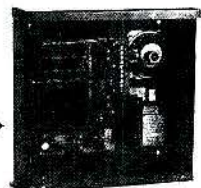
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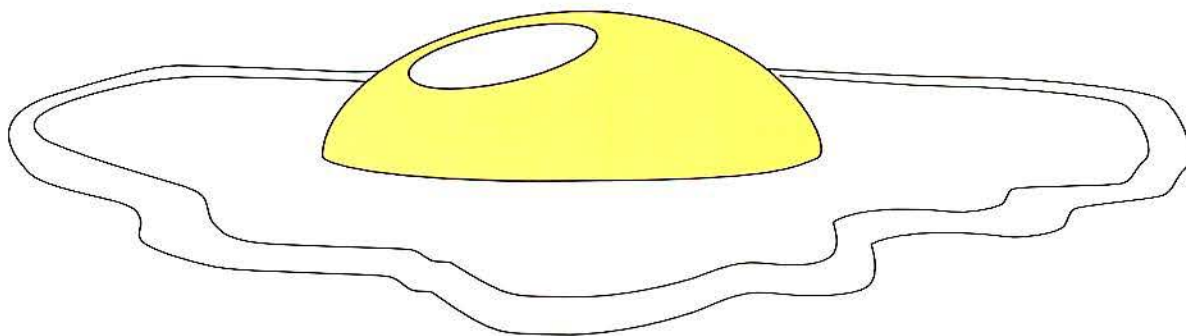
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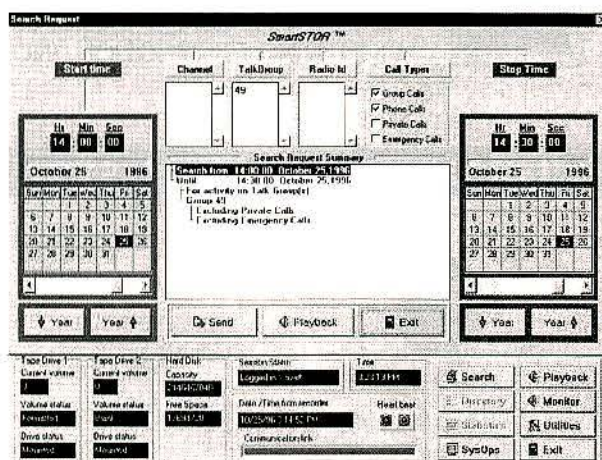
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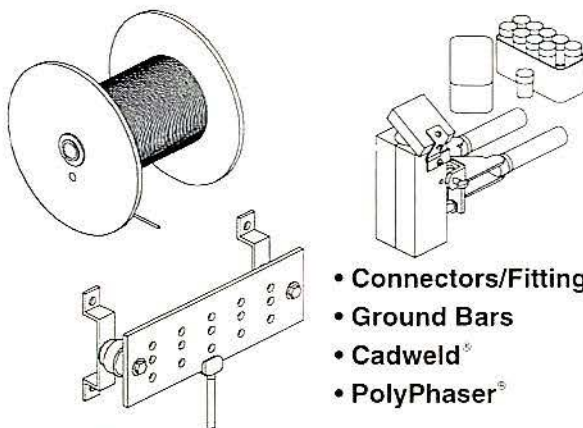
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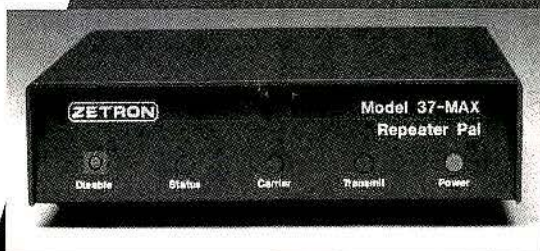


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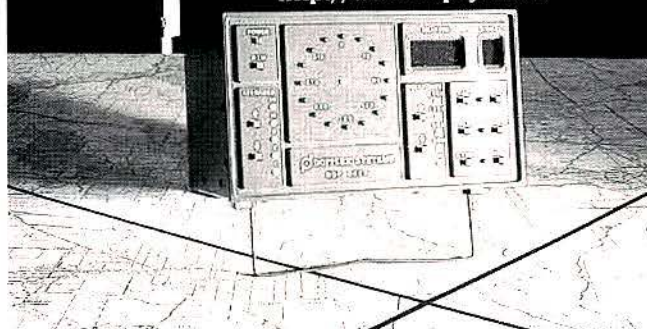
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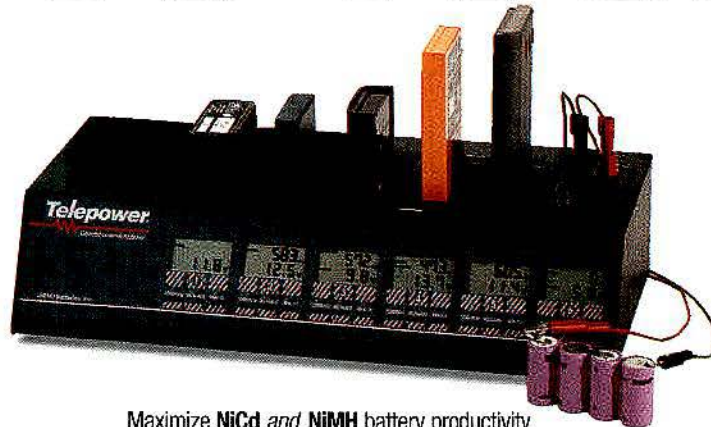
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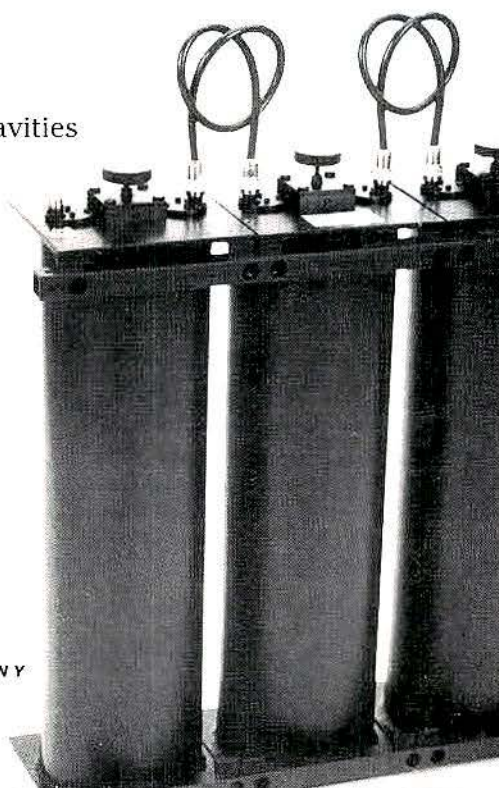
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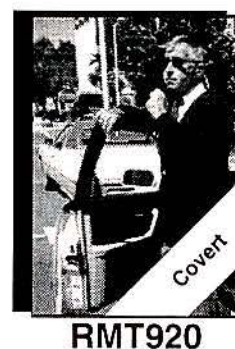
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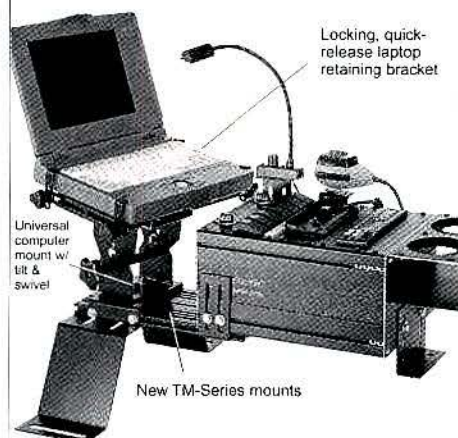
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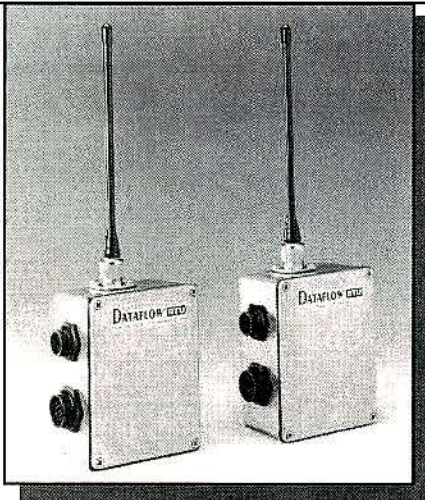
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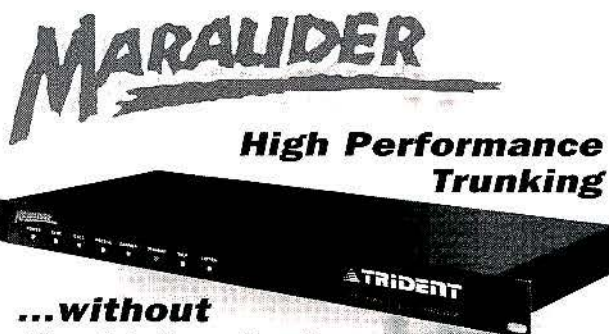
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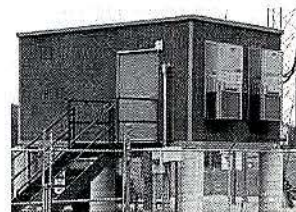
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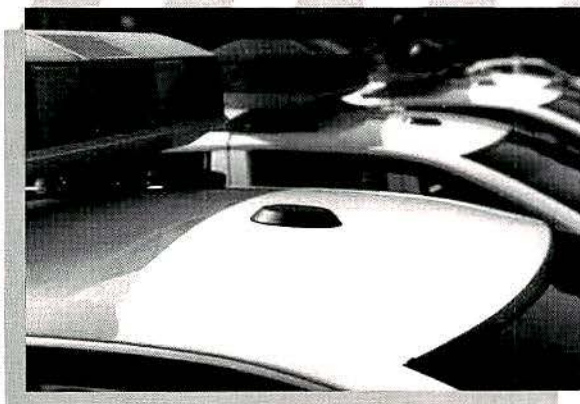
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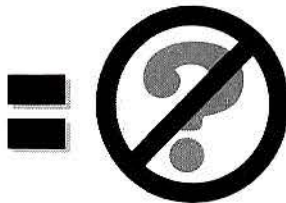
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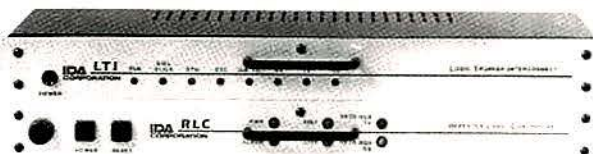
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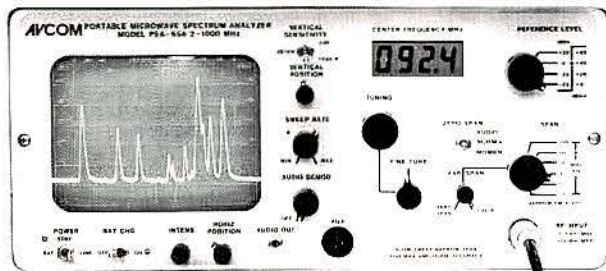
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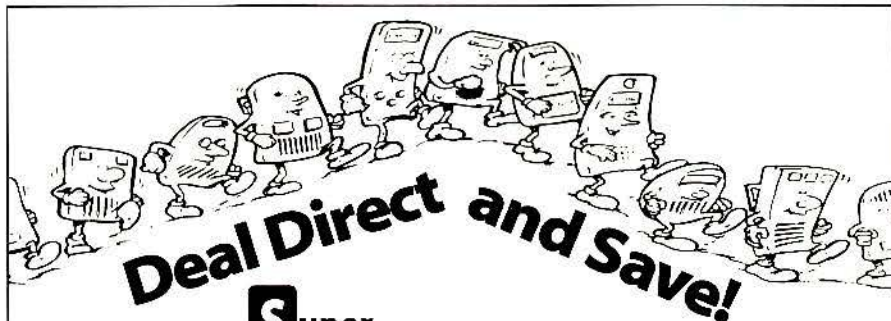
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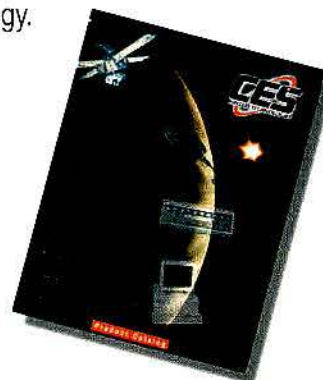
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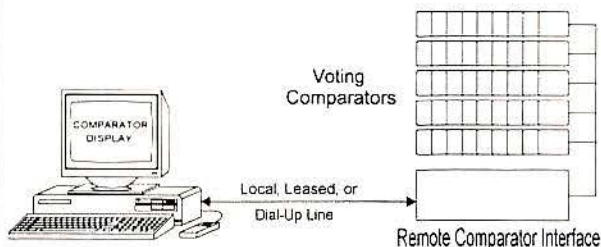
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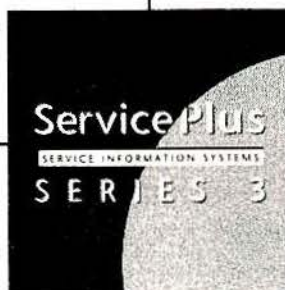
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dave@trilithic.com

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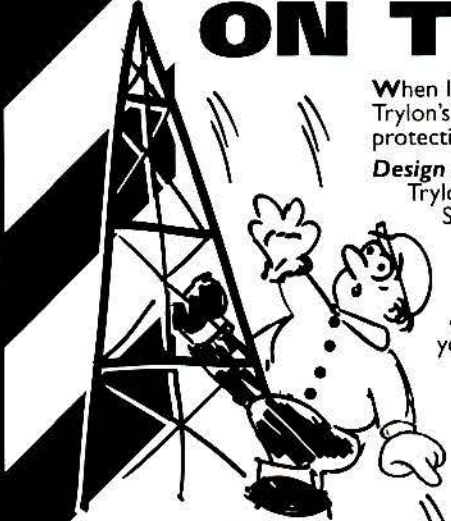
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 ADVANTAGE — Real Time Strategies  
 AEGIS MPA PORTABLE — Ericsson  
 AEROGlas — Allen Telecom Group  
 AIRCELL — Trilogy Communications  
 AIRPAC — O A R  
 ALGO DATA RECORDERS — Algo Data Systems  
 ALL POINTS — Lynn-Arthur Associates  
 AMERICAN NETWORKING PRODUCTS — E F Johnson  
 AMERICELL — Scala Electronic  
 AMPHENOL — Amphenol RF/Microwave  
 APOLLO CLIMATIC ENCLOSURES — Telco Services  
 ARMOR WEAVE — Allen Telecom Group  
 ARRESTOR PLUS — Andrew  
 ARRESTORPORT PLUS — Andrew  
 ASTRO — Motorola  
 ATLASOUND — Atlas/Soundolier  
 ATM ADAPTERS — IMT ComSys  
 AUTHOR — Hark Systems  
 AUTOPAGE — Decibel Products (Allen Telecom Group)  
 AUTOCELL — Decibel Products (Allen Telecom Group)  
 AUTOFIND VEHICLE TRACKING — Corp Ten International  
 AUTOPAGE — Miracom Technologies  
 AUTOTRUNK — Decibel Products (Allen Telecom Group)  
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 BESTLITES — Best Power Technology  
 BLACK WIDOW — David Levy  
 BOARDMOUNT — Destin Thomas Products  
 BONDMASTER — Automated Production Equipment  
 BUNGEEWEAR — Pier Marketing

## C

CADI — MX-COM  
 CALIDA — Orbacom Systems  
 CALL CHECK — Dictaphone  
 CALL CHECK DIGITAL MESSAGE REPEATERS — Dictaphone

CALL DIRECTOR — Dataprobe  
 CALL GUARD — E F Johnson  
 CALLBACK, CALLBACK II, CALLBACK III — Logotronics  
 CAR KITS — ORA Electronics  
 CASP — Christie Electric  
 CATS — Lockheed Martin Microwave-Narda  
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 CELLCO — Telewave  
 CELLMASTER — Les Wallen USA  
 CELLREACH — Benelec  
 CELLSCOPE — Grayson Electronics  
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 COMSITEPLUS — Douglas Integrated Software  
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 CUSHMAN — RF Imaging & Communications  
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 CYCLON — Hawker Energy Products

## D-F

D NET — E F Johnson  
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 DG, BGME, DGRM, DGRM B — Comm-Net 2000 Comm & Mfg  
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 EXPORTVAN — Mobile International  
 EXTEND A CELL — Allen Telecom Group  
 EZBILL — The Genesis Group  
 EZID — The Genesis Group  
 EZSAVE — The Genesis Group  
 EZTRAC — The Genesis Group  
 EZWATCH — The Genesis Group  
 FANON — Fanon Courier  
 FASPAC — O A R  
 FAST PAGE — Indyme  
 FCC PROF SERIES DATABASE — PerCon  
 FERRUPS UPS — Best Power Technology  
 FIRST SOURCE — David Levy  
 FLASH GUARD — Hughey & Phillips  
 FLASHER — Berkeley Varitronics Systems  
 FLEET TRAK — Navigation Data Systems  
 FLEETSERVICE — Auto-Trac  
 FLEXWELL — Cablewave Systems Div (RFS)  
 FM CUBED — SpaceCom Systems  
 FM SQUARED — SpaceCom Systems  
 FONEWEAR — Pier Marketing  
 FONFAX — Curtis Electro Devices  
 FORM MADE PAINLESS — Brown & Schwaninger  
 FORTRESS UPS — Best Power Technology  
 FRAMEWORKS — Liebert  
 FRAUDWATCH — Subscriber Computing

## G-I

GAINPOWER — Larsen Electronics  
 GATEKEEPER — Phonetix  
 GENESIS — Hawker Energy Products  
 GENII — Comarco Wireless Technologies  
 GEO DB — PerCon  
 GINA — GRE America  
 GLOBE STRUT — Jackson Telecom  
 GLOBESTAR — Harris Farinon  
 GLOBETRAX — Jackson Telecom  
 GN NETCOM — CommuniTech

GOLDEN SOFTWARE — SoftWright  
 GOLDLINK — Atlas/Soundolier  
 GRIDPAK — Andrew  
 GRIPPER NIPPER — RF Industries (Neulink)  
 GS METALS — Jackson Telecom  
 GUARDIAN — Dictaphone  
 HANDS OFF — Enhanced Systems  
 HELIAX — Andrew  
 HELLO — Enhanced Systems  
 HOOVER — Berkeley Varitronics Systems  
 HYPERCUBED — SpaceCom Systems  
 IMLIGHT — Douglas Integrated Software  
 INFINITY — Ericsson  
 INFOLINK — Linktronic Systems  
 INTELECOOL — Liebert  
 INTELLICELL — ArrayComm  
 THE INTELLIGENT RECORDER E — Seltronics Eyretel  
 INTELLILINK — Real Time Strategies  
 INTELLIPAGE — Real Time Strategies  
 INTERCEPTOR — Statistical Control Systems  
 INTERCEPTOR MACH — Statistical Control Systems  
 INTERMODPLUS — Douglas Integrated Software  
 IPE — Ericsson  
 ISD — PageTap  
 ISOBAR — Tripp Lite  
 ISOCRETE — Andrew

## J-L

JAVELIN — Spilsbury Communications/Racal Canada  
 JOBCOM — Ritron  
 JOHNSON — E F Johnson  
 JOTTO DESK — Jotto Desk  
 JRL — Cellular Wholesalers  
 KABAND GHZ TRANSCEIVERS — IMT ComSys  
 KALMUS — Benelec  
 KDT — King Communications  
 KING — Communication Engineers  
 KITCHEN CALL — Service Alert  
 KIZZ — Berkeley Varitronics Systems  
 KPC — Ericsson  
 KRYPTIC KFH — Comm-Tech Int'l  
 KRYPTIC KRC — Comm-Tech Int'l  
 KULDUCKIE — Larsen Electronics  
 KULGLASS — Larsen Electronics  
 KULROD — Larsen Electronics  
 L PAGE — Reach Electronics  
 LANDTRUNK — Telemobile  
 LASH — Television Equipment Associates  
 LCD MOUNTING MACHINE — Linktronic Systems  
 LEXSTAR — Alexander Batteries  
 LIBERTY — CML Technologies  
 LIBERTY SERIES — TCC Industries  
 LINEMAN — Helper Instruments  
 LINGO — Motorola  
 LITTLE GLASS HOUSE — Liebert  
 LMDS — IMT ComSys  
 LOPRO MOBILE ANTENNA — Northpoint Communications Products

LTR — E F Johnson  
 LTROAMX — SmartLink  
 LTX — SmartLink  
 LYNX — Western Multiplex

## M-O

M R R T — Telemobile  
 MAGNACOM — Telex Communications  
 MAGNAPHONE — SES Solar Electric Specialties  
 MAGNAROEPE — Telex Communications  
 MAPPS — SES Solar Electric Specialties  
 MARCONI — RF Imaging & Communications  
 MASTR III — Ericsson  
 MATCHBOX — Helper Instruments  
 MAVRIC — Metric Systems  
 MAXITEL — Telepoint  
 MAXRAD — Latcom  
 MC INFINITY — Amtelco  
 MCN — CTI Products  
 MCS — EDX Engineering  
 MDS MOBILE RADIO — Ericsson  
 MEGA SWITCH — Hark Systems  
 MEGASTAR — Harris Farinon Div.  
 METROVIEW — Ball  
 MICRO COM M — Magellan Systems  
 MICRO Z — MCG Electronics  
 MICROCELL — Peninsula Engineering  
 MICROFILL — Allen Telecom Group  
 MICROLITE — Allen Telecom Group  
 MICROMATE — Amphenol RF/Microwave  
 MICROSPAN — Allen Telecom Group  
 MICROVAN — Mobile International  
 MICROWAVE MICROCELL — Peninsula Wireless Communications  
 MILLIVOLTER — Helper Instruments  
 MINI COMM — Relm Communications  
 MINICELL MULTI MODE BASE STATION — Steinbrecher  
 MINIFLECTOR — Scala Electronic  
 MINIVOX II, MINIVOX LITE PHONE — Audiovox  
 MINUTE QUOTES — Slattery Software  
 MOBI CAB — Sigtone  
 MOBI IDENT — Sigtone  
 MOBI SCRIPT — Sigtone  
 MOBI STAT — Sigtone  
 MOBIL TENNA — RF Products  
 MOBILE COMMUNICATION CENTER TRAILERS — Wells Cargo  
 MOBILEWEAR — Pier Marketing  
 MOBINAV — DataBurst Technologies  
 MODULATOR — Les Wallen USA  
 MODULINK — Shure Brothers  
 MONARK — Monark International  
 MONOGRAM MOBILE — Ericsson  
 MONOGRAM PORTABLE — Ericsson  
 MSITE — EDX Engineering  
 MUL STOLEN VEHICLE LOCATOR — Mitsubishi International  
 MULTI NET — E F Johnson  
 MULTIPLIER PLUS — Multiplier Industries  
 NAMFAX — Curtis Electro Devices  
 NAVTRACKER — Grayson Electronics



NECKSET — Television Equipment Associates  
 NETWORKREADINESS — Comarco Wireless Technologies  
 NEW MAR — Jan Communications & Electronics  
 NEW SERIES — Comarco Wireless Technologies  
 OCTAS — Berkeley Varitronics Systems  
 ODEGUARD UNITS — Lightning Deterrent  
 ODYSSEY — Hawker Energy Products  
 OFR ON FREQUENCY RADIO — Kaval Electronics  
 OMNI C — RF Products  
 OMNI J — RF Products  
 OMNI LOC — Allen Telecom Group  
 OMNI PURPOSE — Atlas/Soundolier  
 OMNIPOWER — JBro Batteries  
 OMNIPOWER — Tripp Lite  
 ON GLASS — Allen Telecom Group  
 ONGUARD — ATX Research  
 OPAS — SAFCO Technologies  
 OPENMEDIA CELLULAR PREPAID — Open Development  
 OPENMEDIA ENHANCED SERV PLATFORM — Open Development  
 OPENMEDIA PREPAID — Open Development  
 OPTIMIZER — Alexander Batteries  
 ORATOR — Phonetix  
 ORION MOBILE RADIO — Ericsson

## P-Q

PACKETCLUSTER — Cerulean Technology  
 PACKETCLUSTER PATROL — Cerulean Technology  
 PAGE IT — Capital Data Systems  
 PAGEKOM — Atlas/Soundolier  
 PAGELINK — Linktronic Systems  
 PAGEMATE — Miracom Technologies  
 PAGENTRY — Real Time Strategies  
 PAGER PARTS UNLIMITED — PageCo International  
 PAGERWEAR — Pier Marketing  
 PAGESITTER — Statistical Control Systems  
 PAGETHRU — Grayson Electronics  
 PAGETRACKER — Grayson Electronics  
 PAGETRACKER PRO — Grayson Electronics  
 PANDORA — Berkeley Varitronics Systems  
 PARAFLECTOR — Scala Electronic  
 PASSPORT — Berkeley Varitronics Systems  
 PATHFINDER — Metric Systems  
 PATHFINDER EXPLORER — Metric Systems  
 PATRIOT — Ritron  
 PATRIOT SPS — Best Power Technology  
 PC CRADLE — Onsite Instruments  
 PC PAGE — Service Alert  
 PCF MTS TERMINAL — Pacific Circuit Design  
 PCS PORTABLE RADIO — Ericsson

PCS TRANSMITTER — Berkeley Varitronics Systems  
 PERSONAL SMART CHARGER — Alexander Batteries  
 PHAZAR — Hazeltine  
 PHONELINK — Telemobile  
 PHOTOGENSET — SES Solar Electric Specialties  
 PLANET — Mobile Systems International  
 PLUS — Relm Communications  
 POCSAQ — Linktronic Systems  
 POP PAGE — Statistical Control Systems  
 POP — EDX Engineering  
 PORTA TENNA — RF Products  
 PORTAPAK — CSC Power Systems  
 PORTOCOLIZER — Miracom Technologies  
 POWER ANALYST — Bird Electronic  
 POWER MASTER — Telewave  
 POWER PRO — Meirick  
 POWER STAR — Alexander Batteries  
 POWER THRUSTER — David Levy  
 POWERPAK — CSC Power Systems  
 POWERSURE — Liebert  
 POWERTOPPER — LBA Technology  
 POWERVERTER — Tripp Lite  
 PRESTIGE — Audiovox  
 PRESTIGE CELLULAR HANDHELD PHONES — Audiovox  
 PRESTIGE CELLULAR MOBILE PHONES — Audiovox  
 PRESTIGE CELLULAR PORTABLE PHONES — Audiovox  
 PRINTPAGE — Miracom Technologies  
 PRISM — TGA Systems  
 PRISMPLUS — Allen Telecom Group  
 PROFESSIONAL CAR PHONE ACCESSORIES — Kensington & Icknield  
 PROLINK — David Levy  
 PROLOG — Dictaphone  
 PROLOG DAT DIGITAL LOGGER — Dictaphone  
 PROMAP — Grayson Electronics  
 PROMAS — SAFCO Technologies  
 PRONTO — Amtelco  
 PROTEK — PageTek  
 PT — PageTap  
 PUSH BUTTON PAGING — Service Alert  
 PVT SQUELCH — MX-COM  
 QUADRALINK — Harris Farinon Div.  
 QUANTUM — Digital Microwave  
 QUICK FORM LICENSING SOFTWARE — Slattery Software  
 QUICK GRIP — Allen Telecom Group  
 QUICKSILVER — Lynn-Arthur Associates  
 QUICKSTICK — Les Wallen USA  
 QUIKPAGER — Canamex Communications  
 QUIKSITE — MLJ

## R

R D — David Levy  
 R A P I D — Statistical Control Systems  
 RADIAX — Andrew  
 RADIOPAC SOFTWARE — John Mitchell

RADIUS — Motorola  
 RANGR MOBILE RADIO — Ericsson  
 RCD — CTI Products  
 REFLEX — Christie Electric  
 RF ENGINEERING TOOLS — Communications Data Service  
 RFCAD — Communications Data Service  
 RFPATH — Communications Data Service  
 RFX — Amphenol RF/Microwave  
 RITRON TELEMETRY — Ritron  
 RMC — Trilog Communications  
 ROAMNET — Sigtone

## S

S SERIES STACT MOUNTS — SMC Electro-Mount  
 SABER — Motorola  
 SAMLEX — Samlex America  
 SANTA — Appropriate Data Communications  
 SCEPTER — King Communications  
 SCORPION — E F Johnson  
 SDC — Samlex America  
 SDP — Shinwa Communications of America  
 SEC — Samlex America  
 SECOM — Samlex America  
 SECRETE — Television Equipment Associates  
 SECTOR — Macaw Electronics  
 SECURENET — Motorola  
 SENTOR — King Communications  
 SERVICEPLUS — ServiceWare  
 SHDMAP — EDX Engineering  
 SIGNAL — EDX Engineering  
 SIGNAV — Sigtone  
 SIGNED — Monark International  
 SIGTEC — Sigtone  
 SIMRAD TAIYO — Simrad  
 SINADDER — Helper Instruments  
 SKYTRUNK — Telemobile  
 SLIM MOUNTS — SMC Advanced Products  
 SLIMGARD — Television Equipment Associates  
 SMART CHARGER — Alexander Batteries  
 SMART LIGHT SENSOR — TowerWatch  
 SMART LINE — Dataprobe  
 SMART MIC — Bramco  
 SMART ROCC — FWT  
 SMART SHELL — FWT  
 SMART SWITCH — Dataprobe  
 SMARTBUS — Atlas/Soundolier  
 SMARTCELL — Allen Telecom Group  
 SMARTNET — Motorola  
 SMARTRUNK — SmarTrunk Systems  
 SMARTRUNK II — SmarTrunk Systems  
 SMARTSTOR — Swift Computers  
 SMARTSWITCH II — CTI Products  
 SMARTZONE — Motorola  
 SMR LINK — SmartLink  
 SMRTSAM — SAFCO Technologies  
 SMRTSAM PLUS — SAFCO Technologies  
 SOLAR CELL — SES Solar Electric Specialties  
 SOLARADIO — Photocomm



SOLAVOLT — Photocomm  
 SOUNDOLIER — Atlas/Soundolier  
 SPD VHF NUMERIC PAGER — Shinwa  
 Communications of America  
 SPECO — Jan Communications &  
 Electronics  
 SPECTRA — Motorola  
 SPECTRUM — Digital Microwave  
 SPECTRUM — PerCon  
 SPIKE FREE — Best Power Technology  
 SPM SMART POCKET MODEM — ADS  
 Advanced Digital Systems  
 SPYDER — Berkeley Varitronics Systems  
 STABILANT — DW Electrochemicals  
 STAR SCAN — Harris Farinon Div.  
 STAT PORTABLE MOBILE RADIOS —  
 Shinwa Communications of America  
 STEELVAULT BUILDINGS EQPT  
 SHELTERS — Landmark Tower  
 STI — Survey Technologies  
 STINGER — Spilsbury Communications/  
 Racal Canada  
 STRATEGY SERIES — Atlas/Soundolier  
 STRING ALARM — Dataprobe  
 STRIPES OF QUALITY — Allen Telecom  
 Group  
 STROBE GUARD — Hughey & Phillips  
 SUMMIT — E F Johnson  
 SUNMATE — Atlantic Solar Products  
 SUNPAK — Photocomm  
 SUNPHONE — Photocomm  
 SUPERPAK — CSC Power Systems  
 SUPERTRAC — Liebert  
 SURE COMM — Telephonics  
 SURFER — SoftWright  
 SURGE DIVERTER — MCG Electronics  
 SURGE GUARDIAN — MCG Electronics  
 SURGE MASTER, SURGE MASTER II —  
 MCG Electronics  
 SURGE PURGE — Citel America  
 SYSTEM — Telemobile

## T

TABLE PAGING — Service Alert  
 TANGO — Motorola AMSD  
 TAP TERRAIN ANALYSIS PACKAGE —  
 SoftWright  
 TAPLINK — PageTap  
 TASC — Television Equipment Associates  
 TDM SERIES — Orbacom Systems  
 TELEDAPT — Telewave  
 TELELINK — Berkeley Varitronics  
 Systems  
 TELEPOWER — JBro Batteries  
 TENMA TEST EQUIPMENT — MCM  
 Electronics  
 TENOR — Motorola AMSD  
 TENULINE — Bird Electronic  
 TERMALINE — Bird Electronic  
 TERRN — EDX Engineering  
 THE CONSOLIDATOR — Havis Shields  
 Equipment  
 THE WIRELESS CONCERT — Motorola  
 AMSD  
 THUGLASS CELLULAR ANTENNAS—  
 ORA Electronics

THRULINE — Bird Electronic  
 THRUSTER — David Levy  
 THUNDRA PRO — Atlas/Soundolier  
 TONER — Helper Instruments  
 TOUCHNAV — DataBurst Technologies  
 TPATH — EDX Engineering  
 TRACPAC — O A R  
 TRANSIENT ELIMINATOR — Lightning  
 Master  
 TRAVEL TENNA — RF Products  
 TRCC TELEPHONE RADIO  
 COMMUNICATION CON — Positron  
 TREE CELLS — FWT  
 TRI ANALYZER — Alexander Batteries  
 TRILOGUE — Comverse Technology  
 TRILOGUE INFINITY — Comverse  
 Technology  
 TRPROFILE — Communications Data  
 Service  
 TRUSSCRETE — Andrew  
 TSAM — CTI Products  
 TT — PageTap  
 TUNIPOLE — LBA Technology  
 TVSS — Liebert  
 TWB — Amphenol  
 TXL — Amphenol  
 TXYLAN — Telewave

## U-V

ULTRA PORTABLE — Comverse  
 Information Systems  
 ULTRA SYSTEM — Comverse Information  
 Systems  
 ULTRA TOWER — Comverse Information  
 Systems  
 UNEX — CommuniTech  
 UNI LOK MOUNTS — SMC Advanced  
 Products  
 UNICABLE — RF Industries (Neulink)  
 UNIDAPT — RF Industries (Neulink)  
 UNINTERRUPTIBLE BATTERY SYSTEM  
 UBS — Best Power Technology  
 UNIPAGE VI — Dinet  
 UNISON — Tripp Lite  
 UNITEL — Telepoint  
 UNITY I UPS — Best Power Technology  
 UNIVAN — Mobile International  
 UNIVERSAL NAMMER — Curtis Electro  
 Devices  
 UPLINK — Larsen Electronics  
 UPSS UNITIZED PHOTOVOLTAIC SKID  
 SYSTEM — Direct Power & Wind  
 UPSTATION — Series D, GX, S  
 Liebert  
 UTILI COMM — Relm Communications  
 VALUFLEX — Andrew  
 VALULINE — Andrew  
 VARI TAP — Atlas/Soundolier  
 VCC VEHICLE COMMUNICATION  
 CADDY — SPJ Furniture Technology  
 VERIFIER — Hark Systems  
 VERIFIER — Seltronics Eyretel  
 VERITRAC — Dictaphone  
 VERSA MOUNTS — SMC Advanced  
 Products

VERSA CABINET — Utility Structures  
 VERSA SHELTER — Utility Structures  
 VERSA VAULT — Utility Structures  
 VERTI TENNA — RF Products  
 VIKING — E F Johnson  
 VIP — Reach Electronics  
 VISIBILITY PLUS — TLP Technologies  
 VMAIL — Telescan  
 VMC — DataBurst Technologies  
 VOCALERT — Dinet  
 VOICE ALERT — Phonetix  
 VOICE CONTROL — Atlas/Soundolier  
 VOICE COURIER — Phonetix  
 VOICE GUARD — Ericsson  
 VOICE LOGGER — Phonetix  
 VOICE TONE — Atlas/Soundolier  
 VXI — CommuniTech

## W-Z

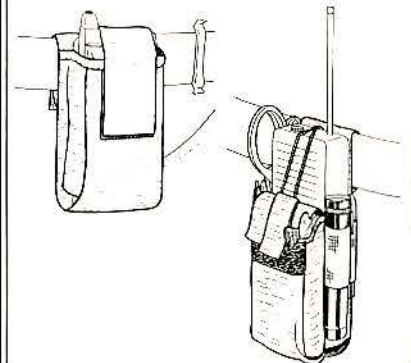
WALKABOUT PCS — SAFCO  
 Technologies  
 WATTCHEE — Bird Electronic  
 WAVETEK STABLOCK — RF Imaging &  
 Communications  
 WINAVL — LOCSYS  
 WIRE COM — CeoTronics  
 XTRAFLEX — RF Industries (Neulink)  
 ZAP TRAP — Les Wallen USA  
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## Anytime, anywhere

By Robert H. Schwaninger Jr.

Okay, I'm tired of it, and I suspect the remainder of the industry is also getting a little sick of the whole public debate about what should be done with the 800MHz SMR channels. Auction? Trades? Forced frequency migration? The old rules? The new rules? Wait lists? Short spacing? Etcetera.

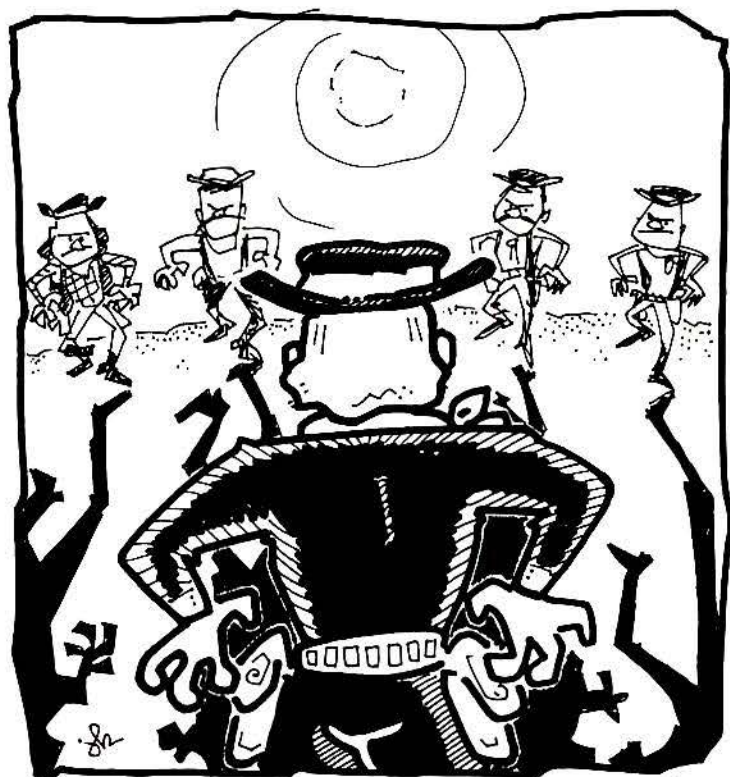
The American Mobile Telecommunications Association (AMTA) tells you that the alleged "consensus" proposal is a great idea, and it supports auctioning the spectrum. Small Business in Telecommunications (SBT) is opposed to auctions and to the consensus proposal. Nextel tells you that it is entitled to "regulatory parity," and it supports the consensus. The Personal Communications Industry Association (PCIA) filed comments stating that the FCC doesn't have the authority to engage in the auctions, that Nextel has engaged in improper actions in warehousing spectrum, and that PCIA might appeal the whole thing to the courts *unless* the FCC gives it credit for coming up with the consensus proposal. If so, PCIA won't appeal, and it is willing to withdraw all statements regarding the FCC's lack of authority and forget the whole thing. Meanwhile, the Industrial Telecommunications Association (ITA) opposes anything that might cause industrial 800MHz spectrum to be subject to auction, but it has not directly opposed the auction of any *else's* spectrum.

So who's right?

Let us *assume* a benevolent FCC that is merely trying to serve the public interest and cares not a whit about any auction money that might arise out of selling wide-area authority on 800MHz channels. (It's a stretch, but we'll try.) Wouldn't

the FCC be interested in sorting out these various positions? Sure it would, and I've got a way to help it.

Until now, the FCC has gotten its information piecemeal, through comments and lobbying and letters from congressional types, many of whom wouldn't know an SMR from a GTO. Some of those comments have been written by your intrepid columnist, me. In fact, a lot of those comments have been written by me while representing the interests of dozens of small, local SMR operators that oppose 800MHz auctions *and* the consensus.



**THE GOOD, THE BAD, THE UGLY;  
THE WISHYWASHY, THE CONSENSUAL**

What the FCC and the industry hasn't enjoyed is a frank, open, direct discussion of the issues.

It is my belief that such a discussion would greatly assist in sorting out the logic behind all of the varying poses which have been struck. For example, SMR WON can explain why it opposed the auctions before, but thinks it's a great idea now if local operators can first negotiate some common spectrum away from Nextel. The FCC can explain why it first believed that forced frequency migration was a bad idea, but later changed its mind. PCIA can explain why adoption of the consensus proposal suddenly cures all of the problems the FCC has regarding its authority to engage in 800MHz auctions. Maybe Nextel can identify some *other* company that is logically positioned to bid at any future auction.

Once flushed out into the open, all of these matters can be laid before the industry, which can then decide who's right and who's just blowing smoke. Wouldn't it be marvelous to finally get a public airing of these matters? I know I'd

Schwaninger, MRT's regulatory consultant, is a partner in the law firm of Brown and Schwaninger, Washington, DC. He is a member of the Radio Club of America.

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show up—just to see whether certain parties would repeat in public what is being peddled behind closed doors.

### My invitation

I am willing to represent the anti-auction, anti-consensus folks in a debate with all other persons, groups, associations, and organizations that support either auctions or the alleged consensus. Specifically, I invite Alan Shark, Jay Kitchen, Morgan O'Brien, Reed Hundt, and a representative of SMR WON to meet me anytime, anywhere, to debate the merits of the various positions. Let's see; that's 5-to-1 odds. I like my chances.

Here are my conditions: a neutral party for administrating the debate; a site announced well in advance so that members of the industry can attend and witness the debate; and industry members able to ask questions of the participants.

How about the FCC meeting room? It's convenient for the participants and it's got the facilities for taping the debate. I would also invite members of Congress to attend and get a clearer picture of the matter.

Within the confines of an honest debate, the FCC staff and members of the public can finally confront the differences between these groups and determine why persons are so impassioned in support of their positions. The public can also tell whether parties' claims regarding each other's motivations are accurate and whether any articulated plans will reach the objectives put forth by a proponent.

### Motorola's participation

As I think about it, we might wish to invite someone from Motorola to join the party. After all, if I've got this thing figured out, Motorola's interests are on the line as well. Consider: Motorola announced that it is willing to give Nextel financing for about \$120 million in equipment, when it knows that Nextel's bottom line keeps moving ever downward. Why? Could it be that Motorola is hoping that Nextel will get the contiguous spectrum for operation of channels on Motorola's equipment, using Motorola mobile units and software? Then, when Nextel makes its move to join its spectrum with cellular carriers, the merger will occur employing the Motorola standard equipment used by Nextel's system. Good night, Qualcomm, and others in the race to set digital cellular standards. Motorola's end run through ESMR just carried the day—and the billions of bucks in licensing fees and equipment.

Okay, I'm just guessing there, but the above scenario would explain how Nextel's agenda before the FCC is able to keep rolling on, even though the commission has to realize that Nextel is not the best business partner. If the commission was going up against the lobbying might of Motorola to forward Schaumburg's cellular objective, that would be a much bigger hurdle to step over on the way to the public interest. Make sense? Maybe.

### Rumormongers and other beasts

Personally, the rumors and innuendoes that have oozed in the cracks of this proceeding have been the most comical to me. One rumor is that I am getting rich off of this proceeding. Let me help you with that one. My law firm has *lost* money on this deal—a lot of money—more than Nextel's offering for five-channel SMR systems these days. Second, some people have claimed that our participation is nothing more than a way to attract new clients. It isn't, but it has. Some people like hiring attorneys with principles. Go figure! Finally, some people have said we can't win on behalf of our clients. I suspect that these same people bought Nextel stock when it was at 55.



## AUTHOR INDEX

- Baugh, Elaine*, E-Comm International, [sidebar] "Support for Olympics Infrastructure Relies on Narrowband 220MHz," November 1996, page 54.
- Bean, William E.*, Wandel & Goltermann, "The Case for Testing Electromagnetic Radiation at Mobile Antenna Sites," March 1996, page 10. [sidebar] "Sniffing It Out," March 1996, page 10. [sidebar] "Taking Radiation Testing to the Field," March 1996, page 16.
- Bishop, Don*, MRT Editorial Director, "Radio Communications Improve Services on Forest Lands," July 1996, page 24.
- Block, Roger*, PolyPhaser, "Tower Down Conductors Offer Little Lightning Protection," April 1996, page 94.
- Buchmann, Isidor*, Cadex Electronics, "Battery Maintenance Made Simple," September 1996, page 16.
- Buller, Patrick E.*, Washington State Patrol, "RF Isolation, Cheap and Easy," July 1996, page 30.
- Bush, James, Ph.D., and Gary Schober*, Berkeley Varitronics Systems, "Measuring Digitally Modulated RF Signals, Part 1," October 1996, page 40. "Measuring Digitally Modulated RF Signals, Part 2," November 1996, page 28.
- Church, H.V., P.E.*, contributing writer, "Computer Analysis of Intermod Requires a Pragmatic Approach," September 1996, page 79.
- Darlington, Joseph, P.E.*, AirTouch Cellular, "Tracing Foreign Interference in the Cellular Band," September 1996, page 48.
- Dornan, James*, Automated Production Equipment-South, "Simplified Rework and Repair of Cellular Telephone Circuitry," November 1996, page 16.
- Dorr, Barry*, contributing writer, "How Mobile Radio Fading Affects RF Data Modems," August 1996, page 34. [sidebar] "Description and Practical Application of DSMA," August 1996, page 38.
- Ellis, E. Kirk*, BellSouth PCI, "Site Noise Measurements Isolate Reception Problems," March 1996, page 50.
- Ewing, Mark A.*, ComTronics, "Helicopter Operations for Service Technicians," September 1996, page 66.
- Guth, Eric*, PageTap, "Paging System Monitor Warns of System Failures," August 1996, page 61. [sidebar] "Paging Sentry," August 1996, page 63.
- Harvey, Ken*, Anritsu Wiltron, "Frequency Domain vs. Time Domain Reflectometry," August 1996, page 8.
- Jana, Kalyan*, Hawker Energy Products, "Battery Basics for Mobile Communications Power Backup," October 1996, page 24.
- Kaercher, Kathleen A.*, Brown and Schwaninger, "Big Hand for the Little Investor," November 1996, page 54.
- Keckler, D.A.*, MRT Features Editor, "Mobile Antennas: Evolution," September 1996, page 62. "FCC Tower Regulation Guidelines," October 1996, page 53.
- Keller, Tom and David Steier*, Glenayre Technologies, "Enhanced Messaging Gives Advantages to ESMR Users," October 1996, page 10.



- Keyser, Lloyd A., Andrew Corporation, "Selecting Dry Air Systems: Static vs. Dynamic Dehydrators," January 1996, page 22.
- Kinley, Harold, C.E.T., South Carolina Forestry Commission, [Technically Speaking] "Are You a Good 'RF Neighbor'?" January 1996, page 8. "RF Switching with Pin Diodes," February 1996, page 8. "Selecting the Proper Base Station Antenna—Part 1," March 1996, page 8. "Selecting the Proper Base Station Antenna—Part 2," April 1996, page 8. "Test Equipment Loading Effects," May 1996, page 8. "Getting More From Your Spectrum Analyzer, Part 1," June 1996, page 8. "Getting More From Your Spectrum Analyzer, Part 2," July 1996, page 50. "Troubleshooting Techniques 101, Part 1," September 1996, page 8. "Troubleshooting Techniques 101, Part 2," October 1996, page 8. "Troubleshooting Techniques 101, Part 3," November 1996, page 8.
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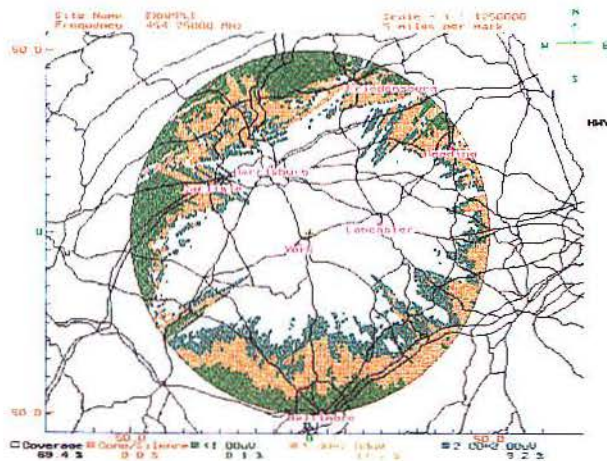
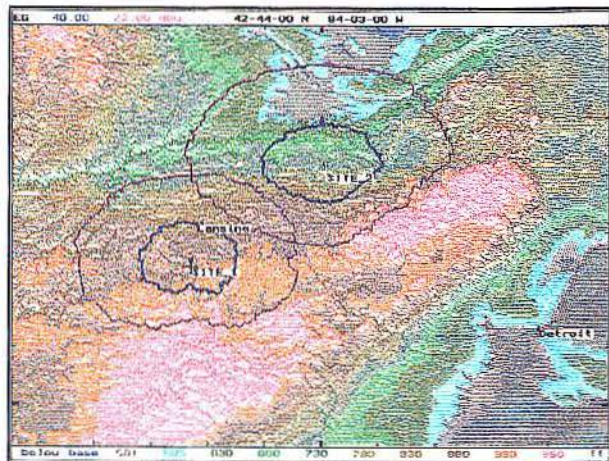
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"Simplified Rework and Repair of Cellular Telephone Circuitry," James Dornan, Automated Production Equipment-South, November 1996, page 16.

"Taking an Active Look at a Passive Problem," Walter Rheingans, contributing writer, March 1996, page 32.

"Technically Speaking: Troubleshooting Techniques 101, Part 1," Harold Kinley, C.E.T., South Carolina Forestry Commission, September 1996, page 8.

"Technically Speaking: Troubleshooting Techniques 101, Part 2," Harold Kinley, C.E.T., South Carolina Forestry Commission, October 1996, page 8.

"Technically Speaking: Troubleshooting 101, Part 3," Harold Kinley, C.E.T., South Carolina Forestry Commission, November 1996, page 8.

"What is Normal, Anyway?" Walter Rheingans, contributing writer, November 1996, page 22.

## **Shielded rooms**

"Servicing Pagers, Part 19: The 'Tinfoil' Tomb," David Ludvigson, Contributing Editor, January 1996, page 10.

## **Signal tracing**

"Technically Speaking: Troubleshooting Techniques 101, Part 2," Harold Kinley, C.E.T., South Carolina Forestry Commission, October 1996, page 8.

## **Simulcast**

"System Integration of the Flex Paging Protocol, Part 1," Lee I. Williams, Glenayre Electronics, June 1996, page 10.

"System Integration of the Flex Paging Protocol, Part 2," Lee I. Williams, Glenayre Electronics, July 1996, page 12.

## **Site acquisition**

"Speeding the Cell-site Acquisition Process," Marc Rolfes,

Ph.D., Illinois Superconductor, November 1996, page 38.

## **Site noise**

"Site Noise Measurements Isolate Reception Problems," E. Kirk Ellis, BellSouth PCI, March 1996, page 50.

## **Spectrum analyzers**

"Technically Speaking: Getting More From Your Spectrum Analyzer, Part 1," Harold Kinley, C.E.T., South Carolina Forestry Commission, June 1996, page 8.

"Technically Speaking: Getting More From Your Spectrum Analyzer, Part 2," Harold Kinley, C.E.T., South Carolina Forestry Commission, July 1996, page 50.

## **Superconducting materials**

"Speeding the Cell-site Acquisition Process," Marc Rolfes, Ph.D., Illinois Superconductor, November 1996, page 38.

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"Simplified Rework and Repair of Cellular Telephone Circuitry," James Dornan, Automated Production Equipment-South, November 1996, page 16.

## **Test equipment**

"Exploit the Power of VSWR Measurements," Robert Koelzer, Loral-Microwave Narda, April 1996, page 10.

"I Can't Hear You!" Walter Rheingans, contributing writer, July 1996, page 20.

"Pay Attention," Walter Rheingans, contributing writer, September 1996, page 24.

"Performance Mapping Identifies Simulcast Problems," Scott A. McFarland, Advanced Signal, May 1996, page 58.

"Taking Radiation Testing to the Field," William E. Bean, Wandel & Goltermann, March 1996, page 16.

"Technically Speaking: Getting More From Your Spectrum Analyzer, Part 1," Harold Kinley, C.E.T., South Carolina Forestry Commission, June 1996, page 8.

"Technically Speaking: Getting More From Your Spectrum Analyzer, Part 2," Harold Kinley, C.E.T., South Carolina Forestry Commission, July 1996, page 50.

"Technically Speaking: Test Equipment Loading Effects," Harold Kinley, C.E.T., South Carolina Forestry Commission, May 1996, page 8.

## **Towers**

"The ABCs of Communications Towers," Betty J. Pilar, Andrew Corporation, February 1996, page 46.

"FCC Tower Regulation Guidelines," D.A. Keckler, Features Editor, October 1996, page 53.

"Report Light Outages with Tower Site Monitor," Larry Quigley, Bramco, May 1996, page 46.

"Tower Down Conductors Offer Little Lightning Protection," Roger Block, PolyPhaser, April 1996, page 94.

"Towers Benefit Local Efforts at Revitalization and Growth," Henry J. McGinnis, P.E., Landmark Tower, February 1996, page 10.

"When Devil Winds Destroyed the Mount Diablo Site," Ron Wren, Diablo Communications, November 1996, page 10.

## **Transmission facilities**

"Co-location Helps Carriers Speed Facility Construction," John E. Myers, United States Cellular Wireless Communications, November 1996, page 48.

## **Transmission lines**

"Selecting Dry Air Systems: Static vs. Dynamic Dehydrators," Lloyd A. Keyser, Andrew Corporation, January 1996, page 22.

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### VHF highband

"Radio Communications Improve Services on Forest Lands," Don Bishop, Editorial Director, July 1996, page 24.

### Voice logging

"Finding the Needle in the Electronic Haystack," Carl J. Swift, Swift Computers, September 1996, page 36.

### Voice messaging

"Enhanced Messaging Gives Advantages to ESMR Users," Tom Keller, and David Steier, Glenayre Technologies, October 1996, page 10.

### VSWR

"Exploit the Power of VSWR Measurements," Robert Koelzer, Loral-Microwave Narda, April 1996, page 10.

"I Can't Hear You!" Walter Rheingans, contributing writer, July 1996, page 20.

"Technically Speaking: Selecting the Proper Base Station Antenna—Part 1," Harold Kinley, C.E.T., South Carolina Forestry Commission, March 1996, page 8.

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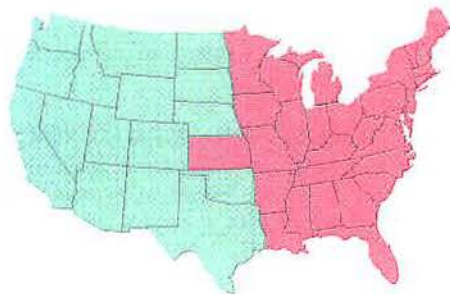
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CONXUS™ Communications, a winner in the FCC narrowband auctions, is designing and constructing a nationwide communications system to offer advanced wireless messaging services.

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Minimum qualifications are a technical institute certificate in engineering technology, equivalent Military or job-related experience, two years experience in maintenance/operations in two-way radio, microwave, paging, satellite or data transmission networks, a valid US Driver's license, satisfactory driving record, and a willingness to excel in an entrepreneurial environment.

Qualified candidates should send a résumé and cover letter to:  
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East Bay Municipal Utility District—headquartered in Oakland, California—is seeking individuals for the positions of Microwave/Radio Technician. The District is the tenth-largest independently operated water utility in the nation and a recognized industry leader.

Duties of the position include installation, maintenance and repair of digital telephones, multi-channel microwave electronic equipment, antennas, battery backup, power supplies and grounding systems.

Requires completion of twelfth grade or its equivalent and four years of experience in analog/digital microwave and mobile radio.

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Recruitment and Classification  
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Western Communications is looking for Comm-Techs for it's Northern Nevada operations, field/bench experience, minimum 2 years on current Motorola radio systems and equipment. Knowledge of RSS software. \$35K to \$59K per year DOE.

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BOTHELL, WA 98021-8490  
FAX: 206-806-9292**

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COMMUNICATIONS  
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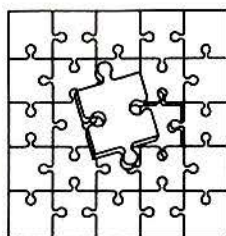
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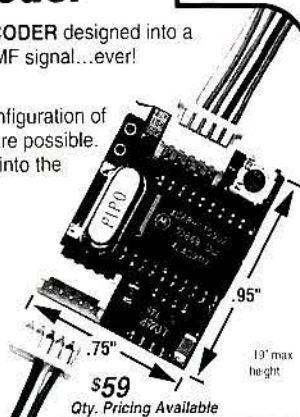
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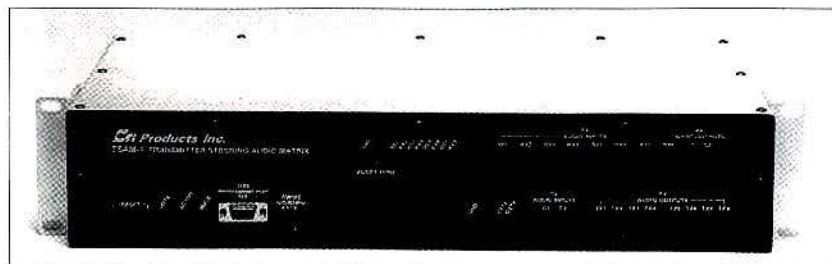
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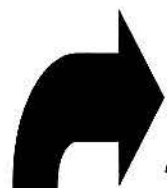
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3 Uniden APU42K 4-ch. UHF handheld	\$40. ea.
5 Uniden Force APX 110A charger	\$25. ea.
10 Johnson PPL 6000 UHF II mobile	\$60. ea.
7 Johnson 8710 LTR 800 Trunking Mobile	\$75. ea.
1 Midland 70-980 800MHz Trunk mount radio no accessories	\$75.
3 Midland 70-482B 110w VHF Trunk mount radio no accessories	\$95. ea.
1 Midland 70-565C mobile 470-490MHz	\$95.
1 Midland 70-050C mobile 42-50MHz	\$125.
1 Midland 70-050B Low Band base station	\$250.
1 Midland 70-530C UHF T-band base station 470-490MHz	\$150.
4 Kenwood TK-200 VHF portables w/keypads	\$75. ea.
1 Standard C766L 35w UHF mobile	\$40.
3 TEKK TS-470 2-ch. UHF portable w/CTCSS	\$40. ea.

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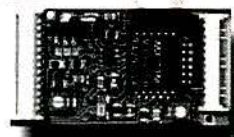
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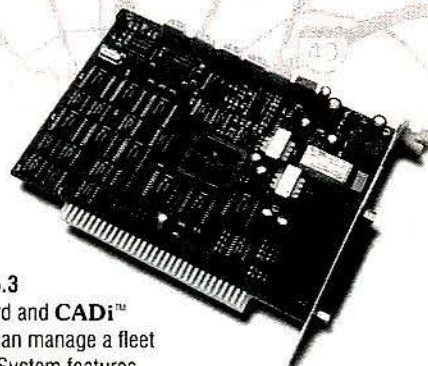
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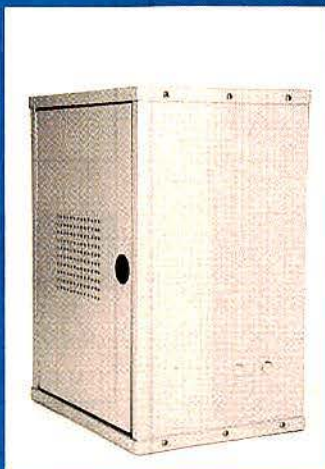
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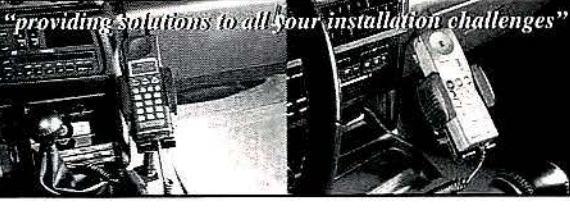
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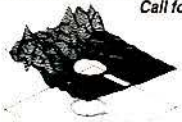
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EAGLE	66	58	520-204-2597	Sti-Co Industries Inc.	72	75	716-662-2680
Eagle Telecom Intl.	81	65	713-280-0488	Super Wireless Warehouse	113	99	313-559-3237
EDX Engineering Inc.	28	26	541-345-0019	Sutter Buttes Two Way	157	170	916-674-7532
El Paso Comm. Systems	90, 160	87, 175	915-533-5119	Swift Computers, Inc.	87	83	713-240-5885
EMI Corp.	86	119	602-581-2875	TCS Consultants	146	151	409-588-3200
Ericsson Radio	42-43	48	804-948-6071	Telepath	30	15	510-656-5600
Fanon Courier	162	180	800-345-1354	Telepoint Inc.	60	56	310-652-3666
Fourth Dimension Industry	91	89	800-378-0349	Telewave Inc.	85	80	415-968-4400
Gamber Johnson	38	44	715-344-3482	TelExpo '97	93	67	703-907-7736
Harger Lightning Protection	88	85	847-548-8700	TESSCO	21, 23		800-472-7373
Havis-Shields Equip. Corp.	102	106	800-524-9900	Bobby G. Thompson	145	150	602-460-1874
Hustler Inc.	45	32	800-949-9490	Times Microwave Systems	97	90	203-949-8400
Hutton Communications	35	28	800-442-3811	TPL Communications Inc.	48	34	213-256-3000
Hy-Q International	151	156	606-283-5000	Transcript International Ltd.	3	5	800-276-8799
IDA Corp.	107	113	701-280-1122	Transportation Safety Devices	70	73	317-263-9160
IFR Systems Inc.	55	52	316-522-4981	Trident Micro Systems	104	108	800-798-7881
Integra Software	94	69	864-627-5000	Trident Micro Systems	123	117	800-798-7881
IWCE '97	141	120	800-288-8606	Trilogy Communications Inc.	57	54	601-932-4461
JBRO Batteries Inc.	95	70	800-323-3779	Tripp Lite	44	49	312-755-8741
J.E.I.	134	123	916-677-3210	Trylon Mfg. Co. Ltd.	127	103	519-669-5421
JFW Industries Inc.	62	39	317-887-1340	TX RX Systems Inc.	31	16	716-549-4700
JPS Communications	68	60	919-790-1011	Valmont Industries Inc.	41	46	402-359-2201
Kaval Electronics Inc.	77	61	905-940-1400	Vega, A Mark IV Co.	1	4	818-442-0782
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King Communications USA Inc.	11	21	407-291-9009	Vocom Products Co. LLC	111	96	800-USA-MADE
Klein Electronics	154	188	619-631-2811	Wacom Products Inc.	96	71	817-848-4435
KNS Electronics Inc.	166	185	408-432-8100	Western Multiplex Corp.	39	45	415-592-8832
Larsen Electronics	49	35	800-426-1656	Wetec Electronics	156	166	888-469-3832
Leathersmith	94	68	800-233-0440	W & W Associates	83	66	800-221-0732
Linktronics Systems Inc.	121	116	714-952-3683	WirelessWorld Expo '96	143	121	800-288-8606
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Marketronics Corp.	88	88	800-845-1230	Zetron Inc.	75	78	206-820-6363
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